AMERICAN AGRICULTURIST.

Designed to improve all Classes interested in Soil Culture.

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July.

"Know ye the land where the cypress and myrtle
Are emblems of deeds that are done in their clime?
Know ye the land of the cedar and vine,
Where the flowers ever blossom, the beams ever shine,
Where the light wings of zephyr, oppressed with perfume,
Wax faint o'er the gardens of Gûl in her bloom,
Where the citron and olive are fairest of fruit,
And the voice of the nightingale never is mute."

BYRON.

We have the climate, if not the land of which the poet sung, during our brief torrid Summer. July seldom fails to give us heat of tropical intensity, even to the most Northern limits of our country. Away up in the valleys of the Green and White Mountains, the thermometer goes up to a hundred and over, and the leaves of that salamander plant, Indian corn, shrivel and droop under the burning sun. On one of these scorching days, a scene in a maize field on the prairies, or in the bottom lands of the affluents of the Mississippi, might easily be mistaken for a plantation in the valley of the Amazon. The whole horizon is yellow with the glowing heat. The atmosphere, as far you can see, quivers with the radiation like the breath of a furnace. No breeze relieves the suffocating stillness, nothing diverts the thoughts from the one sensation of sweltering heat. The cows stand midway in the sluggish water, the birds gasp for breath in the voiceless branches of the trees, and the tired mower reeking with sweat seeks the welcome shade. We have occasional days as oppressive as the Summer weather of Cuba, and were it not for the intervals of cloud and storm we should hardly be able to endure the severe labors of the hay harvest.

This tropical quality of our climate gives us a great advantage over England, and the nations of northern Europe. The bright sunshine of July and August matures the maize crop from Georgia to Canada, a plant of tropical origin and appearance. The bean of Lima matures in latitudes north of this city, without forcing, and with a little of the gardener's art, can be had in Maine. Tomatoes and egg plants, okra and Sweet potatoes, are getting to be well known in Northern gardens. Melons, in their varieties, are grown almost as perfect on Long-Island and in Jersey, as on the banks of the Savannah, and the St. John's. Indeed, we have seen the Black Spanish Watermelon, of full size and flavor, grown on the upper waters of the Hudson, though the crop is not a certain one in that latitude. Our gardens are continually gaining accessions from tropical lands, and many of the vegetables that we mature of this class are better flavored than when they have the full strength of a torrid sun.

The boasted magnificence of tropical vegetation and scenery is a theme that will do very well for poets, descanting to readers, who only judge of the reality from descriptions and from pictures. It must be admitted that they get up some very respectable palms and cocoanuts, lemon and orange groves in Cuba. But the men who have seen the big trees of California, or the specimens of White pine and hemlock, still to be found in the primitive forests of our northern States, have nothing to complain of in the way of small timber and dwarf vegetation. We have oaks with the growth of centuries in their boughs, evergreens that were stately trees

"Fit masts for tall admirals,"

before the masts of Christopher Columbus were seen off San Salvador. Those who have never seen a bit of primitive forest, such as still exists in the wilderness of Northern New-York, and in the mountainous regions of New-England, as well as "out West," hardly understand the capabilities of our climate in growing trees. No scene in tropical lands can inspire sublimer emotions than these monarchs of the wood, as one treads the dim aisles beneath their vaulted arches.

"Thou has not left
Thyself without a witness, in these shades,
Of thy perfections. Grandeur, strength, and grace,
Are here to speak of Thee. This mighty oak
By whose immoveable stem I stand, and seem
Almost annihilated,—not a prince,
In all that proud old world beyond the deep,
E'er wore his crown as loftily as he
Wears the green coronal of leaves with which
Thy hand has graced him."

In the way of floral display nothing can surpass a locality of laurels or rhododendrons in full bloom. This latter shrub has a tropical look though it exists in its perfection in this latitude. It comes into full bloom this month, and is found in greater luxuriance and size in the forest, than in the cultivated grounds of our rural improvers.

We have this great advantage over our tropical friends, that while they can not mature many of our plants and fruits by artificial means, we can grow all of theirs under glass. With a little lumber and glass, and a few tons of Pennsylvania coal, we can get up a small section of Cuba (we go in for this kind of annexation) in any corner of our gardens, and grow pine-apples and bananas, to our heart's content. Orange and lemon trees, Japonicas, and a multitude of smaller foreign plants are common in our conservatories. The rich have it within their means to enjoy Southern vegetation and flowers, all Winter long, at a very moderate expense.

But what planter of the Antilles has ever devised a Winter house for maturing the fruits and flowers of the temperate zone? In no corner of his paradise can he grow apples, or raise his own cranberry sauce. We can raise our temperature to the point required to grow his vegetation, at a tithe of the cost required to reduce his to the point where the fruits and flowers of the North will mature.

We have no occasion to envy the inhabitants where perpetual Summer reigns. In this month, we have a genuine taste of their climate, without artificial means. With a little money and labor we can prolong it to suit our convenience and pleasure. There can be little doubt, that a given amount of means will purchase a man more of the luxuries and comforts of life here, than upon any other spot on the globe. So far as the enjoyment of life is concerned we had rather have a Pennsylvania farm, or one anywhere West of that State, to the furthest confines of Missouri, than all the plantations amid the spice groves of the tropics. We know of no finer sight than a fifty acre wheat field, just turning yellow, and nodding its plumes in graceful invitation to the reaper, or a like field of maize, a little later in the season,—the husks cracking open, to let out the golden ears. What perfume is sweeter to the farmer, than the breath of his clover and grasses, when his scythe sweeps down their dew laden blossoms at sunrise, or the odor of the same grasses when dried, and carted home at nightfall. We do not blame the perfumers of Paris, for labelling one of their compounds "New mown hay," nor wonder at its popularity with the Broadway belles, if it equals the genuine article.

It is worth our while, at this culminating point of the year, to pause amid the ripening fruits, and the ingathering of the grain and hay harvests, and contemplate the fullness of our blessings. Would that we could see them near at hand, as they really are, rather than afar off, as they are not in the wilderness of the West, or in the climes of perpetual Summer. As a class, farmers have not half the blessings they are fairly entitled to, by virtue of the climate and their position in society as producers. They grow wood for fuel, and yet multitudes have not even a shade tree about their dwellings. They raise the cream for our strawberries, while not one in a hundred of them have any strawberry bed of their own. They have plenty of land and manure, and yet a good

vegetable garden is still the exception among them. With a little attention and care in the selection of seeds, they may have the most highly prized and healthful luxuries of the city, without money and without price. There is no occasion for them to sigh for the lands of the orange and the myrtle. They may woo their lovers, and live with them, beneath their own vines and fig trees.

Calendar of Operations for July 1858.

[We note down sundry kinds of work to be done during the month, not so much to afford instruction to practical men, as to call to mind the various operations to be attended to. A glance over a table like this will often suggest some piece of work that might otherwise be forgotten or neglected. Our remarks are more especially adapted to the latitudes of 38° to 45°; but will be equally applicable to points further North and South by making due allowance for each degree of latitude, that is, later for the North, earlier for the South.

☞ At this season there is comparatively little to be said; in the busier months of planting and sowing, this calendar will be more extended.

EXPLANATIONS.—*f* indicates the *first*; *m* the *middle*; and *l* the *last* of the month.—Doubling the letters thus: *ff*, or *mm*, or *ll*, gives particular emphasis to the period indicated.—Two letters placed together, as *fm* or *ml*, signifies that the work may be done in either or in both periods indicated; thus, work marked *fm* indicates that it is to be attended to from the first to the middle of the month.]

Farm.

The "rolling year" has now brought us to one of the hottest and most laborious months. The heavy work of "haying and harvest" has to be prosecuted vigorously under a vertical sun, requiring activity and yet prudence and moderation in labor, and temperance and discrimination in food and drink. Happily, the ingenuity of man has succeeded admirably in bringing brute force subservient to his will, by harnessing his horse to the scythe and cradle (the mowing and reaping machines), thus rapidly and economically performing the hardest work of the farmer. Besides cutting hay and grain, buckwheat and turnips are still to be sown; and the hoes should by no means be idle.

Buckwheat does best sown, ff,—but may be put in, m. Read the article on a succeeding page.

Bark of Hemlock and Oak will "run" during most of July, and may be peeled for tanners, at any leisure time during dull weather. Pile up the former peelings.

Bees—Late swarms coming out at this season should, in most cases, be returned to the hive. See "Apiary" on next page.

Buildings, Yards, &c.—Keep everything about them clean and neat. Leave nothing to ferment and breed distempers.

Butter and Cheese making are going on briskly within doors. See chapters elsewhere.

Cabbages for a late crop may still be planted, ff. Choose damp weather for transplanting, if possible. Early ones will now be ready for market and the ground may produce a *second* crop, or be sown to turnips.

Corn for soiling may be drilled in or sown broadcast, ff. It will form a good succession with the earlier plantings.

Fences—Do not permit cattle to discover any weak points, if you would save yourself loss and trouble, and keep out of contention with your neighbors.

Haying is the important work of July, but with a good mowing machine on smooth ground, a boy and team of horses can perform the heaviest labor. It is needless to say, "make hay while the sun shines," and get it in before the evening dews begin to fall, for every good farmer knows that much.

Hay Caps—Procure or make a quantity, ff, if not already on hand. One hundred of them, costing but a few dollars, may save several tuns of hay in a single season.

Hoeing will be a secondary operation this month, but the horse-hoe or cultivator, if you have them, should be run through the corn occasionally, and hand-hoes at least be used, whenever needed, or an opportunity offers—sometimes in the morning before the dew is off the grass.

Hogs—Keep them supplied with materials for making manure compost, and see that they have plenty of water of liquid food.

Manures will soon be wanted for the Winter wheat and rye. Cart muck, turf, loam and weeds to cattle and hog yards during dull weather. Scrape up the cattle droppings each morning and throw in heaps, under cover, mixing with muck. Do not neglect that valuable manufactory, the privy. Throw in every few days, a quantity of muck, door yard scrapings, charcoal dust, or plaster, &c., to absorb unpleasant odors and increase the bulk and value. See "Sink Slops as Manure."

Millet—Sow, ff, m, for a succession as a soiling crop. In connection with corn it will be found very valuable in a time of short feed.

Oats will probably need cutting, ll. Do not allow them to get over ripe.

Pastures—See that the grass is sufficient for the grazing stock. A scant feed now will soon be seen in a diminished supply of milk, and slow growth of young stock.

Poultry require little care now, save keeping from the small fruits and grain fields. Hens may still be set for late chickens, although earlier ones are preferable.

Potatoes—Early crops will be ready for harvesting and marketing during the month, and the ground may now be appropriated to late cabbages or turnips.

Rye—Cut, ff, m, as it ripens.

Seed Wheat and Rye—Let them ripen fully before cutting. Allow no foul stuff to be gathered with them. Thresh with a flail, rather than machine, which bruises many of the kernels.

Sheep are apt to be worried, and killed even, by dogs, at this season. A few small bells placed upon the necks of several of the flock will usually help protect them. Give salt each week.

Sugar Cane—Sow or drill in, ff, m, for cattle, and especially for hogs.

Timber cut in July and August will last much longer for fencing, and other uses, than when cut in Winter and Spring.

Tobacco—Keep ground light and free from weeds. Pinch the upper growth to induce side leaves.

Tools—Have them at all times in the best working order. Fifteen minutes spent in grinding a scythe in the morning will often save double the time during the day, to say nothing of the saving of strength.

Turnips—Sow for full crop, f, mm, and even, l. Newly plowed rich soil is best. See article elsewhere.

Wheat—Cut before it is fully ripe, or when passing from the dough state.

Young Stock—Give them especial care at this season. A calf or colt whose growth is checked now, seldom does as well afterwards.

Orchard and Nursery.

Pruning both old and young trees, thinning late and harvesting early fruits, budding, plowing and hoeing nursery stock, are now the chief labors of the orchardist and tree grower. The most important operation is pruning, which is discussed on a subsequent page. Early fruit is now ripened and giving the cultivator a foretaste of what is coming. He already feels repaid for his vigilant care of the fruit orchard.

Budding will commence, m, or perhaps, f, on plums. Examine stocks often to ascertain the earliest period at which the bark will start. The order in which trees are usually ready to bud is: plum, cherry, pear, apple, quince and peach. A full description was given in last volume, page 161. Pear stocks often complete their growth early in the season, and on this account should be budded at the first favorable opportunity.

Caterpillars—Destroy late broods, ff, with the brush figured on page 186 of the June *Agriculturist*, or pinch them off by hand.

Cherries are fast ripening and many of the varieties need picking and marketing at once. Others may remain for a time on the trees without injury. Guard against barking the limbs with heavy boots and breaking them in the operation. Dry a portion of the fruit in a moderately heated oven, or put it away in cans and jars for Winter use.

Fallen Fruit—Gather and steam or boil the small worm-eaten fruit of all kinds as fast as it falls, to destroy the inclosed insects. Pigs, when allowed the range of the orchard, eat much of the wormy fruit, and effectually kill the germs of a future crop of pests.

Fences—Keep in good repair. Cattle are fond of nipping the young growth in both orchard and nursery. On low branching trees they destroy much of the fruit also, when permitted access to it. Fence the orchard as securely as the garden.

Grafts—Loosen any bandages cutting into the stock, replace wax or cement that has fallen off, and rub superfluous shoots from the stock.

Hoeing—Continue this in nursery rows, and around trees. The horse-hoe or cultivator will be good aids. Loosen the ground and keep down weeds about newly planted and older standards. Allow neither grass nor weeds within six feet of the body of orchard trees.

Insects—Keep lanterns burning, open bottles suspended, and use other methods to destroy curculios, codling moths, caterpillars, slugs, &c., as heretofore recommended. See article on "Enemies of the Pear Tree."

Layer and Inarch shrubs, trees and vines intended for propagation, ff, m. Full descriptions with illustrations were given on page 184, volume XVI.

Manure, ff, trees bearing heavy crops. Procure a good supply of muck during dry weather, for use another season. Lime and ashes are also very valuable for trees.

Pinching or Shortening-in should now be practiced, both in the nursery and orchard. A weak spindling growth may be made more stocky, and side branches induced to grow by heading back the leader, ff. See illustrations page 116 of the April number; also notice the beneficial effects of shortening-in standard trees, on the same page.

Plums—Gather all the punctured ones which fall prematurely, and cook them to destroy worms. Continue the curculio preventives recommended last month, and keep all warty excrescences pared off.

Pruning—Now is the proper time for pruning, as recommended in an article further on.

Seedlings of tender varieties in the nursery, or planted in pots and boxes need a shade during the hot days of July. Holly, magnolias, and many of the evergreens would burn up the first season from seed, if not partially shaded.

Stones or Pits—Collect cherry pits for planting, and put in boxes of moist, not wet earth, before they become dry.

Thin Fruit, especially on young trees. Those set out this season should not be allowed to ripen fruit. Many trees are seriously injured by permitting them to ripen an over crop. By removing a portion of the fruit on older trees, the remainder will be much finer.

Weeds are as much out of place in the nursery, and about orchard trees, as in the garden. Let all the grounds be kept free from them.

Kitchen and Fruit Garden.

One of the first things requiring attention now is to see that all vacant spots are planted with late vegetables. Some of the early crops are ready for use or for market, and after clearing the ground, giving a coat of manure and a deep plowing, it is all ready for a second crop. Hoeing will come in for a large share of the work of July, and as a general thing those vegetables do best which receive it most frequently and most thoroughly.

Asparagus—Omit cutting, ff, if it has been practiced to this time. Let the stalks grow the rest of the season, but keep the ground loose and free from weeds. Give a coating of packing salt, which will be carried into the soil by rains and dews.

Beans—A few of the quick growing kinds, as early Valentine, Refugee and China may still be planted, ff.

Beets for Winter use do well sown, ff. Stir the ground among former plantings. Some of the early beds will now yield a supply for the table.

Blackberries were doubtless staked up last month, or earlier. Some of the heavily loaded *branches* of the New-Rochelle variety may need an additional tying, l, to prevent their splitting down.

Cabbages and Cauliflowers—Set out the remaining plants, ff, m. Water the beds before taking them up, and the plants after setting—always retaining as much earth about the roots as possible when transplanting them. Set in the afternoon unless a cloudy or damp day be chosen. The crop of early cabbages is now ready for market.

Carrots, Parsneps and Salsafy—Stir the ground often between the rows, and allow no weeds to rob them of moisture and nourishment.

Celery—Plant out the late crop in recently prepared trenches, ff, watering and shading with a board shelving over them, unless set in cloudy weather. Hoe often.

Corn—Plant sweet varieties, ff, for final crop, which with that planted the middle of June will give a good and prolonged succession for table use, and for drying or preserving otherwise.

Cucumbers for pickles may be planted, ff. Keep the ground well cultivated, and drive off bugs by the protectors illustrated on page 182 of the June number.

Egg Plants—A few may still be put out, ff. If on good soil and well tended they will yield a fair crop.

Endive—Set out, ff, for late use, and sow seed at the same time for Winter crop.

Espalier or Wall Trees—Prune and shorten in as required, spreading and training the branches.

Fruit—Thin and prop or tie up overladen branches and vines.

Gooseberries—Keep the ground well mulched, and dust the bushes with sulphur if mildew shows itself.

Grapes—Rub off unnecessary shoots and nip fruit bearing branches, retaining 4 or 5 leaves beyond the bunches. Shoots for cutting out in the renewal system should be allowed to grow unmolested this season. Keep the soil light and free from weeds.

Herbs are mostly in flower, ff, and should be cut for drying or distilling. Gather them in the early stages of bloom, dry in the shade and rub off the flowers, putting in cans or bottles so as to keep from the air. Rose leaves may be preserved in like manner, or immediately distilled.

Hoeing—Follow up closely, ff, mm, ll. The soil needs to be often stirred and kept free from weeds, in order to grow vegetables successfully.

Insects—Apply a sprinkling of salt to the surface of ground ready for planting with a late crop, to destroy or drive away grubs. Hand pick the spotted squash bug figured on page 143 of the May *Agriculturist*. See, also article on the "Pea Weevil," in this number. Don't shoot

or scare the birds if they do eat a few cherries.—They are entitled to them for the good they do in destroying insects.

Lettuce—Plant for a constant supply, f, m, l. Sow the Silesian lettuce for late use.

Melons—Plant, ff, for mangoes. Hoe those planted early.

Mushrooms—Begin to collect spawn materials, m, ll, for Autumn beds.

Onions—Keep well hoed. Sow, ll, for "pips" to put out next season.

Peas—Sow, ff, m, l. The weevil has now changed to a fly or bug and left old peas. There is little danger of injury from bugs to those sown at this season.

Potatoes—Early crops will soon be ready to harvest. See that the land is occupied for the rest of the season. Unless gathered for early use or marketing, better leave potatoes in the ground.

Preserving Fruits and Vegetables—Now, while the table is abundantly provided with these, lay in a supply for next Winter, by drying, or better, putting away in air tight cans or jars. Corn, beans, peas, tomatoes, and in fine all the vegetables and fruits, when properly put up come out nice and fresh in Winter and Spring. See directions elsewhere.

Radishes—Scatter a few seed among other crops, ff, m, for late use.

Raspberries are now in the hight of bearing and require daily picking and marketing.

Rhubarb—Linnæus is still in good eating condition when pulled from near the centre of the plant. Dry or put in cans or jars a quantity for Winter use.

Seeds—Gather Turnip, Cabbage and other seed now ripening. Dry with care and label for another year.

Spinach—Sow, ff, m, for a late supply.

Squashes—Hoe often and watch for bugs.

Strawberries have nearly perfected their crop and are pushing out runners, which should be clipped where hill culture is desired.

Thinning both fruit and vegetables may still be necessary. Give both plenty of room.

Tomatoes—Plant a few, ff, for late use. Keep hoed and staked or bushed.

Transplant vegetables of all kinds with care at this season. The hot dry weather renders them less liable to live. Water the seed bed thoroughly before taking up plants, and set out in the evening or during dull weather, shading from the sun for a day or two.

Turnips—Sow remainder of the rutabagas, and the White French variety, ff, m, on newly worked, rich soil. Scatter flat kinds among other crops and where early vegetables are being removed, m, l. See chapter elsewhere.

Weeds—Compost or give them to the hogs if they have been permitted to grow at all.

Winter Cherries—Though rather late, they may still be planted out for a late supply.

Flower Garden and Lawn.

These grounds should be very attractive at this season. The perennial plants are many of them still in bloom, while the early annuals are daily coming into flower. The beauty and fragrance of the rose still remains, and many of the house plants now adorning the borders are gay with bloom. With those who have little to do in the hay fields, there is more leisure now, after the hurried season of preparation and planting, which gives an opportunity to look over the whole, both to enjoy the beauty, and perfect any arrangements not fully completed. There is still sufficient time to sow a few

Annuals of the quick growing sorts on ground heretofore occupied by bulbs, or where the flower stalks of early blooming plants have been cut away.

Box Edgings not already clipped should be sheared, ff.

Bulbs—Lift, ff, m, those which are to be divided and reset, filling their places with annuals.

Cactuses—Divide and reset, f, m, pruning into shape.

Camellias—Keep partially shaded and well syringed.

Carnations, Pinks, Piccotees and Pansies—Continue to layer and put in cuttings, ff, m. Open the flower pods by slitting upward, those inclined to burst at the side. Water in dry weather, and keep flower stalks neatly tied up.

Dahlias—It is not too late to set out plants started last month in pots or otherwise. Prune side branches and firmly stake tall plants.

Flower Stalks are unsightly after completing their bloom. Cut them away and plant annuals to occupy the space.

Gladioluses—Plant, ff, any not already out, and stake early ones.

Gravel Walks should be kept scrupulously clean from grass or weeds, and be often raked to prevent packing. Renew any thin spots.

Hedges—Finish the first pruning or clipping, ff. Plash, or weave in to fill up weak places.

Hoe grounds often. Even if there are no weeds the soil should be frequently stirred.

Insects—Look after the slug on the rose bushes and destroy with whale oil soap and the syringe. A sprinkling upon other shrubs occasionally, will divest them of insects of various kinds.

Lawns and Grass Edgings look best when covered with a growth of only a few inches in hight. Mow or shear often, trimming smoothly.

Neatness and order should be prominent features of the flower borders. Allow no weeds to grow; cut away decaying stalks, leaves and branches; tie tall growing plants neatly and securely, put the walks in good order and have everything about the grounds as attractive as possible. Remember these gardens are the appropriate "Pleasure Grounds" of the farm-house or cottage.

Pelargoniums—Head back plants now out of bloom, making cuttings at the same time.

Potted Plants—Keep them watered, and the soil well stirred and free from moss. Turn the pots occasionally to disengage any roots which have penetrated into the soil through the hole at the bottom.

Prune trees and shrubs as recommended under "Orchard Calendar," and elsewhere. Many plants now growing vigorously may be improved in shape by cutting back and pinching in.

Rhododendrons now make a fine show of bloom. Water freely, and hoe often, or mulch about them.

Roses are still in full flower and fragrance. This is the proper season to bud and layer in order to change the variety and increase the stock. New growth layered now, will root sufficiently to be removed another Spring. Keep pillar and climbing varieties tied to stakes, or trellis. Use the oil soap solution freely to destroy slugs and leaf hoppers. Even the rose bug evidently dislikes the odor.

Seeds—Collect any now ripening. Examine plants carefully as they come into bloom to verify the correctness of their names.

Stake or otherwise confine all tall growing plants liable to be broken down by high winds.

Transplant the remainder of the biennials and perennials sown last month.

Verbenas—Increase stock of Fall blooming plants by layering.

Water any plants needing it during dry weather.

Weeds—Keep down by frequent hoeings.

Green and Hot Houses.

These are comparatively empty now save in extensive propagating houses, or where there are large collections of tropical plants which are more conveniently managed under cover. Of course the houses are now open night and day, excepting during cold or heavy rains. An abundant supply of freely circulating air is indispensable, and sprinklings or syringings should be frequently given in addition to copious waterings.

Budding of many of the woody plants requires attending to, ff, m.

Callas—Repot towards the latter part of the month, watering less freely.

Camellias—Bud, ff, m, repotting at the same time those requiring it.

Cinerarias—Divide the roots of old plants to increase the stock.

Cuttings—Make and insert, f, m.

Earth for Potting—Provide a good supply and have it well mixed against a time of need.

Fuchsias—Repot, f, m, where large plants are wanted.

German Stocks—Plant for Winter bloom, f, m.

Grapes—Throw open the houses, watering and syringing often, excepting late vines which have not matured their crop. Destroy insects, pinch in the shoots, and dust with sulphur where mildew makes its appearance.

Insects of all kinds need especial looking after now. The whale-oil soap solution will prove sufficient in most cases, although it may sometimes be necessary to resort to tobacco fumes.

Layer and inarch many of the woody plants to increase the stock, ff, m.

Oranges and lemons should now be budded, unless previously done.

Pines are now ripening, and require a moderate amount of water, with an abundance of air. Plant well-ripened and partially dried crowns for a new supply. Side suckers may be set out for the same purpose.

Pottings—Continue upon plants requiring more room. Many of the seedlings now need potting. Change the surface soil in large pots and boxes, adding a rich compost.

Prune Plants, ff, m, to bring them to a good form. In some of the plants the old wood requires cutting away to renew the growth.

Seeds—Gather any ripening, and save with care, or plant at once.

Verbenas, petunias, geraniums, &c.—Get up a Winter stock, by cuttings and layers, f, m.

Water—Give copious supplies during the warm, dry weather of this month, sometimes both morning and evening. Wash freely with a syringe.

Apiary for July.

BY M. QUINBY.

After all your care, you will probably have some queenless stocks, and likewise some swarms which possess a queen, but are too small to amount to anything. By putting one of these in the old stock, they will be well disposed of, that is, if healthy, and if not healthy, put the bees into the new swarm. Any stock not sending out a swarm by the middle of this month should now be examined for disease.—If diseased, drive them out immediately to begin anew. Such as *have* sent out swarms, and are diseased should be driven out three weeks after the first swarm. This period (three weeks after swarming) is also the proper time to prune out *old combs*, when necessary. I would not, however, advise this operation oftener than once in eight or ten years—its being dark colored is no proof of its being unhealthy.

In many sections, bees will have secured their Winter stores by the last of this month. Boxes containing surplus honey enough to make it worth while, should be removed; for where no buckwheat is raised, probably no more honey will be added—and where there is buckwheat the honey added will be much darker, and cause the whole to look badly. If from *any* cause, the bees are reduced so as not to cover the combs, the worms will be quite *sure* to *destroy* them, and if the colony can not be strengthened by some means, the contents of the hive (honey and wax), should be secured in advance of the worms, even if the bees are wasted. This course is better than to breed swarms of moths to molest other hives.

Buckwheat.

Any time up to the middle of July, will do to sow this valuable grain, and almost any description of soil, dry, and not absolutely barren, will yield a tolerable crop, provided it be moist enough to sprout the seed and get it above the ground. A shower or two, and the dews will bring it on afterwards. We have even raised a good crop of buckwheat when sowed in a dry time in July, and it did not come up until the middle of August.

The ground need not be plowed until nearly ready to sow, as the fresher the earth, the more readily will the seed germinate. It should, however, be light and fine. Half a bushel to three pecks of seed to the acre is sufficient, as the stalk branches out like a tree, and the grain is borne on every tendril. Cool September nights best fill and mature the grain. Early sown, and blooming in the hottest weather, the seed is apt to blast in forming, and hence a light crop; but if fully set in early September, before a frost, it rapidly fills, and gives a bountiful yield.

When ready to cut, which may be done while some of the later kernels are yet green, it should, according to its bulk on the ground, be carefully cut with a cradle or scythe, and lie a day or two to dry, and then be carefully forked together into little stooks to cure, and not taken in until the stalks are fully dry. It can then be thrashed in a machine more effectually than in any other mode, although it is easily beat out with the flail. When cleaned, up spread it thin on a floor, that it may thoroughly dry, since being late in the season, it is more liable to damp than the earlier cut grains.

Well stored, and kept dry, the straw is a tolerable fodder for young stock of any kind, and sheep will eat it greedily for a change. We have fed tons of it advantageously to our Winter stock, while for cattle bedding nothing is better.

The virtues of buckwheat as a table food we need not enumerate. Buckwheat cakes are a luxury wherever known; and for poultry, the unground grain is excellent. As pig, cattle, or horse feed it is better ground than fed whole, and when ground is substantial and nutritious. Some farmers have a prejudice against growing buckwheat, as it "fouls" the land for the succeeding crop. Others think it injures the land in its fertility. From long experience, we think otherwise. It kills wire-worms, leaves the soil light and free,

and a crop of Winter rye may be sowed immediately on its stubble to good advantage.

We believe in buckwheat, as one of the staples of an annual farm crop.

Weeding Implements for the Field and Garden.

We present illustrations and descriptions of several implements specially useful for eradicating weeds which are now struggling for supremacy, not in the garden only, but among the carrots, turnips, &c., in the field. The *Weeding, or Bayonet Hoe*, (fig. 1) we introduced to general notice fifteen months since; and, as we said then, we still think it one of the most convenient little implements we know of. The blade, which is about 6 inches long, is sharp-pointed and sharp-edged. It can be used almost like a common hoe, by laying it down upon the side. The point can be turned to the right or left, to work among plants. We have this implement in hand two-thirds of the time we

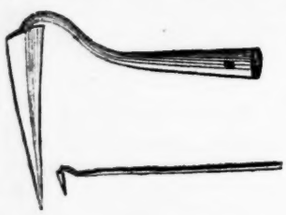


Fig. 1.
WEEDING OR BAYONET HOE.

spend in the garden, at this season. The larger figure shows the metal portion; the smaller one includes the handle, which is, say 4 feet long. The retail price of these hoes is usually about 50 cents. We would not be without one if it cost five times as much.

The Scuffle or Push Hoe (fig. 2) has been in use for some years, but is not so generally known as it should be. The steel blade is 2 to 3 inches wide, and 5 to 10 inches in length. The front edge is beveled sharp, and sometimes the back edge also, so as to cut both ways. The handle, being 5 to six feet long, allows one to stand erect in working, and at the same time reach in to the middle of a pretty wide bed of vegetables. It is

Fig. 2.
SCUFFLE OR PUSH HOE.

useful for working between rows, also for gravel walks, and is every way a very convenient implement. Cost at retail, 37½ to 75 cents, according to length of blade.

The Carrot, or Coultered Scuffle Hoe (fig. 3) is a new and very useful implement. We have heard no name for it yet. On page 166 of June number, we published a note from Dr. Gill, of Dutchess Co., N. Y., describing this hoe. We believe Dr. G. is entitled to the credit of originating it. On casting about to get one made for our own use, we found that they were already being made for a few persons around Poughkeepsie, N.Y., by Messrs. C. H. & W. Sedgwick of that city. It is the common *Scuffle Hoe*, with a coulter or upturned lip upon one end of the blade. The coulter or lip projects forward of the main blade some 2 inches, and is sharp in front. This can be run close along side of a row of plants, cutting the earth without disturbing the roots. The blade being thin, it moves through the earth without throwing it away from the plants. We have tried it thoroughly the past month, and can commend it very highly. Retail price, 62 to 75 cents, according to the length of main blade.

The Double Coulter Scuffle Hoe (fig. 4) is similar to the single implement or rather, consists of two of them put together, as shown in the engraving. We made the sketch from the only one we have

Fig. 3.
COULTERED SCUFFLE HOE.

Fig. 4.
DOUBLE COULTER SCUFFLE HOE.

seen of this kind, which was made for us by Messrs. Sedgwick. We find it defective in that the coulters, being only one inch apart, are too near together. We shall immediately have another made with the coulters 2 to 2½ inches apart, and we are confident it will then be a capital thing to run along rows of onions, carrots and other plants.

Lothrop's Patent Hoes (figs. 5 and 6) we obtained just in time to prepare the engravings for this

Fig. 5.

Fig. 6.
LOTHROP'S PATENT HOES.

article, and have not tried them thoroughly. They are highly recommended, however, by those who have used them. They are made with three or two blades, as shown in the wood cut. The steel blades are rivetted together where the upper corners are joined. They may be used for straddling rows of young plants to stir the earth on both sides at once. They are also adapted to general hoeing and stirring the earth. Retail price, 62 cents for the two blades, and 75 cents for the three blades. The card of the manufacturers, and a strong recommendation from the Hon. Marshall P. Wilder, will be found in our advertising columns.

All the above implements may be obtained at the agricultural stores, except those shown by figs. 3 and 4, and these will doubtless soon be put into the market. We believe fig. 3 is already being made in quantity.

A Home-made Double-coulter Push Hoe.—E. Ryder, Putnam Co., N. Y., writes that the hint from Dr. Gill, last month, is worth to him ten times the cost. He has practised upon it, by removing the blade from the back of an old scythe, cutting off about 5 inches in length, heating it a little to prevent breaking, and then bending up each end about an inch. To the blade thus prepared, a piece of the scythe back was then rivetted to the middle, and a soft wood handle driven on, elevating it so that the hoe will push flat. He adds: "Then keeping it sharp with a file, and aiding with the left-hand fingers, the gloom it casts over the budding hopes of weeds and clover, is comforting to the onions, carrots and—their owner."—It will be noticed that having both ends of the blade turned up, it can be worked to either side of the rows—a hint, this, to manufacturers.—Ed]

The Common Flat Turnip.

According to the adage "on the twenty-fifth day of July, sow turnips, wet or dry." Yet, we would sow them sooner—early in July, if possible. But we have sown them in August, and had a good crop. An old pasture, well top-dressed with ashes and sheep dung, is their best soil, if light and dry—when a newly cleared piece of ground, which few people have on an old farm, is not to be had.

A quarter to a half pound of seed to the acre is enough, if well distributed; and with occasional showers, they will grow vigorously, and yield several hundred bushels to the acre. Although not equal to the Swede, or the Ruta-baga in substance, they make a good green food for all kinds of stock in mild weather, either in the late Fall or early Spring, as a change from hay and other dry forage. As a table dish, during Autumn and early Winter before they become *pithy*, few vegetables are better, or more wholesome. The tops are excellent for Milch cows, and the roots also, if salted, and not fed in such quantities as to give their flavor to the milk.

Like all late, or Summer sown seeds, the flat turnip is a contingent crop, and not always reliable, depending on the wet or dry season for its growth and ripening; consequently it is not recommended to be cultivated in large quantities, unless under particularly favorable conditions, and where the land can be well spared. They may follow peas, or early potatoes in the garden to much advantage as a market gardener's crop, where they are frequently raised in great and profitable abundance. Wherever they will succeed, they should always be sown to more or less extent.

The Long White French Turnip.

To the Editor of the American Agriculturist.

Allow me to add my testimony to what has already been said in favor of the "Long White French Turnip," as it is called. Last season I received half an ounce of the seed in a letter from a friend in Rhode Island, and planted it July 27th, on about ten square rods of ground. I gathered about 18 bushels of turnips, which we have continued to use on the table up to this time, with the highest satisfaction. They are, in my opinion, and that of my neighbors who have had from a peck to a bushel, the very best turnip we ever saw, They are so sweet and free from woody matter, and keep so well. They appear to be as good now as during the Winter. This year I obtained ¼ lb. of seed by mail, which I shall plant—a part about July 1st, a part July 20th, and the rest in the forepart of August. I am glad you have hunted up and brought this turnip into public notice, and that you promise to put it upon your general distribution list next year. If you have any seed left, I hope it will all be called for this year, even though you give it out only as premiums. My half ounce last year was worth more to me than the whole cost of three or four subscriptions for a year. It is to get this seed as premiums,

that the inclosed six names have been obtained as subscribers, though I am sure they will get ten times their money's worth in the paper itself.

T. R. Mulford.

Dane Co., Wis., June 4th 1858.

Remark—We have other letters similar to the above, but have not space for them. We shall have a few hundred packages of seed to distribute this year, as premiums' to the first applicants, as will be noted in the business columns.

I Can Raise Turnips.

A NEW PLAN.

To the Editor of the American Agriculturist.

In a former number, I noticed an article, headed "Can't raise Turnips.". It seems surprising to *me* that there should be the least difficulty in raising a big crop of turnips every year; but, it is nevertheless true, that more than one half of those who make the trial, fail. I think there is scarcely anything done on the farm that is so simple and easy to accomplish, as to raise three, four, or five hundred bushels to the acre, of nice, smooth, sweet turnips, and with less labor, perhaps, than any other crop. I have never failed but one year, and that year I killed the germ of the seed by letting it remain in dampened, unleached ashes, twenty-four hours, previous to sowing. Nine-tenths of the seed did not sprout, and I nearly lost my crop.

My plan is, after taking off a crop of hay where I intend to put corn the next season, I turn over the sward smoothly, about the first of July, then pass over the furrows lengthwise with a roller, to close the seams nicely. I then put a light coat of almost any kind of manure over the rolled land, harrow it over lengthwise, three or four times with a good, sharp harrow. I give it another harrowing once a week, up to the tenth or twelfth of August, which entirely prevents the grass and weeds from growing, and forms a nice, loose mould several inches deep above the undisturbed sward.

At the time of sowing, I sift with the seed, three or four times its bulk of leached wood-ashes, and mix well together. I harrow the ground over before beginning to sow, starting the harrow on one side of the land, and follow the harrow every round, casting the seed high and wide. In this way I get the land pretty evenly sown, by using about a pint of seed to the acre. This is the last that I do to them until pulling time. Let the season be wet or dry, hot or cold, I have not failed to get from three to five hundred bushels to the acre, and have my ground in fine condition for corn in the Spring.

When pulling time arrives, I give the eighth or tenth bushel for pulling and topping. In that way, many families who have no land, and some who have, supply themselves with turnips for Winter. In feeding, my man gives each milch cow about half a bushel daily, with a few quarts of corn, ground in the cob, and a little shorts. This gives the milk and butter, and the pork follows from the milk and buttermilk.

A Subscriber.

Cattawissa, Pa., 1858.

Remark.—The above comes from a good source, and gives a plan which will be new to many. We wish our correspondent had stated the kind of soil. All such particulars are important in narrating experiences, for what may succeed well on one kind of soil may not on another.—Ed.]

Of all the virtues, gratitude has the shortest memory.

Tim Bunker on a New Enterprize.

Mr. Editor:—I never was more astonished in my life, than this morning, when on my way to mill down the Shadtown road. I have been thinking a good deal about miracles lately, and I declare they aren't a bit more strange than some things I have lived to see Jake Frink with a watering trough in his barn-yard is a *poser*, and if you only knew the man as well as I do you would say so. But that aint a circumstance to what I am going to tell you now. You see, I hadn't got more than a mile down the Shadtown road, when I saw a lot of men looking over the wall. At first I thought there must be a fight, and that there would be occasion for me to exercise my office as Justice of the Peace. It would be almost a miracle if there should be such a thing in Hookertown, for we are an uncommonly peaceable community.

As I drove up, I saw uncle Jotham Sparrowgrass, with a team and three hands, busy digging a ditch, and about a dozen Hookertown people looking on. There was Deacon Smith and Seth Twiggs, Jake Frink, Tucker, Dawson, Tinker, and Jones, and among the rest, the minister, Mr. Spooner. It seems uncle Jotham had begun the job the day before, and the thing had made such a sensation, that a pretty strong delegation was out to see Jotham Sparrowgrass at work on an improvement.

There never was a prettier chance in the world to do a nice thing for a bit of land. You see, he had a peat swamp of about three acres, lying in a hollow, mostly cleared of brush, and with a small pond-hole in the middle. The peat in some places was ten feet thick, and all the edge of the bog was wet and springy for at least two acres more. The whole was worthless as it lay, except for the muck which it afforded, of which, uncle Jotham never used a cart load in his life. The bog lay high, and by digging about ten rods, through the rim of the hollow, there was fall enough to drain the whole swamp, three feet deep or more. Here uncle Jotham was at work with his men, like so many beavers.

The main drain had been cut, and one could see how these peat bogs had been formed. After the stones and surface mold had been removed, it was a solid, light-colored clay, which would hold water tight as a basin. Every thing that run into that hollow, and every thing that grew, had to stay there. All the wood, brush, and mosses, that flourished there before the country was settled, had decayed and made a vast bed of vegetable mold. The water having no chance to get out, had operated as a great millstone to press it together very solid. It had now found an outlet and was making a straight wake toward the North Star, as if seeking liberty for the first time.

"You are just in time Squire Bunker," said Deacon Smith.

"You have got another convert here," said the minister.

"Who would have tho't it?" exclaimed Seth Twiggs, as he took the pipe out of his mouth, and blew out a cloud of smoke, that made one think of a locomotive.

"Old Bunker will make fools of us all," soliloquized Jake Frink as he thought of the horse-pond, and the lead pipe leading to his barn.

"Good morning uncle Jotham," said I. "I thought you didn't believe in doing anything with muck swamps, eh? What are you doing here?"

"Why, you see, Mr. Bunker, I've known this 'ere swamp for risin of thirty years, and have raised corn near it, for about the same length of time; and I never had a piece of corn any where in this neighborhood, that war'nt badly eat with the muskrats. You see the scoundrels begin to work upon it early in July, and they keep at it, until frost comes. I've sot traps for 'em, and shot 'em, and done every thing I could think of to kill 'em off, and I believe they are thicker than ever this Spring. So you see, I was riding by your house last week, and seed where that horse-pond used to be, and I got to thinking, and this 'ere plan came to me, all to once, like a flash of lightning. Thinks I to myself, I've got them pesky animals in a tight place at last. I'll dry 'em up, and put 'em on the total abstinence principle, be hanged if I don't. You cant have a drunkard without bitters, nor a muskrat without water, can you? And you see, with one day's work I've took the water all down to the bottom of the pond, and I am bound to go three feet deeper, by the measure. Whether I make any thing out of this bog or not, I'm bound to rid the rest of my farm of a great enemy."

It was a grand sight, Mr. Editor, you may depend upon it. I dont know as I bear any particular ill will to the tadpoles and turtles, but somehow I kind o' like to see their confusion, when the water slopes off on a sudden, and they flop around in the mud, not knowing which way to emigrate. They lay there by the bushel, evidently very much troubled at the day-light. I would go further to see such a sight, than to see all the menageries ever exhibited. I have heard them tell about the fine points in a painting, the contrast of colors, &c. There is no contrast quite so satisfactory to my mind as this light colored clay on top of a black muck soil. I am always certain of dark green to shade it pretty early in the season.

You see, full one-half of uncle Jotham's talk about the muskrats is gammon. He don't like to own that he has learnt any thing from me, or any of his neighbors. But you see he has already made up his mind to plant that bog with potatoes this season, and substitute tubers for tadpoles and muskrats. The fact is, Mr. Editor, that horse-pond movement has done the business for quite a number of my neighbors, and is working better than physic. There are at least four of them started on a new track by that enterprise. Now, if you have the least spark of patriotism come up and see us Independence day. If you expect to see any thing of the Hookertown of the present generation, you must come quick, for I tell you now, this world moves, and no mistake. If you dont come and see what's going on, we shall get up a rebellion, we shall—do any thing but stop the paper. That we are bound to have, whether you come or not. Yours to command,

Timothy Bunker, Esq.

Hookertown, Conn., June 5, 1858.

(It is put down in our note book to visit Hookertown, July 4th—*if we can*.—Ed.)

Where is "Ib" Published?

We have seen, in several of our exchanges, a great number of good articles, (of course they were good, we wrote them ourselves), which articles are *credited* to "*Ib*." Now, we would like to know where that journal *so often* quoted from, is published. We want to get hold of it, we do, for it must be very valuable, since so many are copying from it with due credit. If every paper would only credit the *Agriculturist* for its articles, as well as they do our cotemporary "*Ib*" there would be a mighty stimulus to get the very best articles in the world, just such as would be worth copying and crediting too.

He who greases his wheels, helps his oxen.

Statement showing the AREAS of the several land States and Territories, the amount of land disposed of by sale &c., and the amount unsold and undisposed of on the 30th of June, 1857.

States and Territories.	Areas of the land States and Territories, exclusive of water. Sq. Miles.	Acres.	Surveyed up to June 30, 1857.	Unsurveyed on June 30, 1857.	Offered for sale up to June 30, 1857.	Acres sold up to June 30, 1857.	Donations and grants for schools, universities, &c.	Grants for internal improvements.	Grants for military services.	Reserved for the benefit of Indians.	Swamp lands granted to States.	Railroad grants.	Total of acres unsold and [illegible] proposed, of offered and unoffered lands, June 30, '57
Ohio	39,964	25,576,960	16,770,984	.....	16,770,984	12,822,793	727,528	1,243,001	1,804,423	16,330	32,438	.....	41.651
Indiana	33,809	21,637,760	21,487,760	.....	21,487,760	17,111,221	673,357	1,609,861	1,304,496	126,220	1,250,937	.....	[illegible]239
Illinois	55,410	35,462,400	35,462,400	.....	35,454,262	19,226,103	1,001 795	500,000	9,648,850	48,989	1,833,412	2,595,053	294,150
Missouri	65,037	41,623,680	41,598,898	24,782	41,186,654	18,206,454	1,222,179	500,000	5,274,873	22,587	4,064,788	1,815,435	9,106,267
Alabama	50,043	32,027,520	31,993,813	33,707	31,903,283	16,128,168	925,814	500,000	1,040,924	2,542,378	2,595	2,332,918	8,992.742
Mississippi	37,337	23,895,680	23,895,680	.....	23,892,577	11,492,671	860,624	500,000	269 573	277,612	2,834,090	1,687,530	5,268,250
Louisiana	41,346	26,461,440	24,039,319	2,422,121	19,231,161	4,404,397	832 124	500,000	637,750	.....	10,910,792	1,102.560	5,972,499
Michigan	56,451	36,128,640	36,128,640	.....	34 115,710	11,201,553	1,113.477	1,250,000	2.100 653	109,300	7,273.724	3,096,000	9.793.859
Arkansas	52,198	33,406,720	33,279,008	127.712	32,618.409	5,307,166	932,540	500,000	1.889.933	.....	8,026.358	1.465.297	14 968.810
Florida	59.268	37,931.520	25.362,287	12.569.233	18.876.615	1,616.433	954.583	500,000	413,719	227	11.630,271	1,814.400	17,182,512
Iowa	54.930	35,155,200	34.074,598	1,080.602	24.888,670	11,430.815	951 224	1,385,078	11.963,703	119,183	1,739 505	3.456,000	4.041.544
Wisconsin	53 924	34,511,360	28 419 823	6,091,537	24,131,412	9,262,863	1,604,728	1,069.371	4,730,137	137,894	2 350,000	1,622,800	14.238,498
California	188.981	120.947,840	21 611.447	99.336.393	.....	.....	6.765,404	500.000	.....	.....	.....	.....	113.6~2.436
Minnesota Territory	141 839	90,776,960	12,188,281	78,588.679	2 508,710	1,734,098	5,089,244	6340,000	2,867,280	.....	.....	4,416,000	76 330,337
Oregon Territory	196,295	125.628,800	4,443,831	121,184.969	.....	41,029	6,192,124	.....	.....	.....	.....	.....	118,695.647
Washington Territory	126,457	80.930,080	739 992	80.250,088	.....	1,154	4,545.529	.....	.....	.....	.....	.....	76 443,396
New Mexico Territory	256.309	164.037,760	107.928	163.929,832	.....	.....	8.826.956	.....	.....	.....	.....	.....	155.210,804
Utah Territory	220 196	140.925.440	1.999,908	138,925.532	.....	.....	7,781,707	.....	.....	.....	.....	.....	113,143,733
Nebraska Territory	342,438	229,160,320	1,902 541	217,257,779	.....	28,590	12,175.573	.....	37.720	.....	.....	.....	206 918.436
Kansas Territory	126.283	80,821,120	3,826,326	76.994.794	.....	17,350	4,468,662	.....	125,840	.....	.....	.....	76,217,867
Indian Territory	67,020	42,892,800	.....	42,892,80	.....	.....	.....	.....	.....	.....	.....	.....	42,892,880
Total	2,265,625	1,450,000,000	399,333,464	1,041,710,560	327,066,207	139,032,865	67,736,572	10,897,313	44,109.879	3,400,725	51,948,916	25,403,993	1,088,792,500

The Public Lands of the United States.

We present above, both for present and future reference, a very interesting table, showing at a glance, the amount, condition and location of the lands under the control of the General Government of our country. These statistics are made up only to the first of July, 1857, it requiring the greater part of one year to collect and compile the reports from all the Territories. One of the first things that will attract attention, is the last column, which shows an extent of territory yet unappropriated, of 1,088,792,500 acres! The population of the United States and Territories at the last Census (1850), was 23,263,488. At the rate of increase (36½ per cent) for the previous ten years, our next Census Report (1860) will show a population of 31,715,000. Now suppose the inhabitants divided into families of five persons each, or 6,343,000 families, and this domain equally divided among them. There is unoccupied land enough to supply *each one of these families with a farm of* 172 *acres!* In other words, if all the present inhabitants are provided with just the needed amount of land (and there is twice as much occupied as there is cultivated) we could supply another population as large as the present, with a domain of 172 acres to every five persons.

But five acres of land is an abundant allowance for each man, woman and child. The population of Massachusetts is equivalent to about one individual to each four acres. If, then, we allow only one inhabitant to each five acres of the *unoccupied* land (1,088,792,500 acres) in the possession of our government, and still unsold, there is room for *over two hundred millions* (217,758,500) of people. These figures, however, as large as they may appear, give but a faint idea of the extent and capabilities of our country. Nineteen States are not mentioned in the above table, and even in those named there are over four hundred and sixty millions (461,207,500) acres already disposed of, but, as yet, sparsely inhabited.

It will be noted that over thirty six million (36,301,306) acres have been granted to 14 States for public works; that is, 10,897,313 acres for "internal improvements," such as canals &c.; and 25,403,993 acres to aid in the construction of railroads.

Another column exhibits the large amount of 44,109,879 acres granted for military services. This is equal to 2,560,000 acres *more* than the whole area of the six New-England States; or a territory one-and-a-half times as large as the State of New-York. These "bounty lands" should be taken into account as one item of war *expenses*, by those who are so ready to involve our Nation in another contest.

It is a source of no little satisfaction to find in another column that 67,736,572 acres have been given for schools, Universities &c. If the matter can be rightly managed so as not to prove a detriment to Agricultural improvement, instead of a blessing, we think there can be no objection to adding to this last item the 6,340,000 acres for Agricultural Colleges in the several States, as proposed in Mr. Morrill's Bill.

The third, fifth and sixth columns of the table, show: that of the 399,333,464 acres surveyed up to July 1st, of last year, 327,066,207 acres had been offered for sale, of which 139,032,865 acres had been purchased, leaving open for sale at that date, 188,033,342 acres. As the hard times have operated against free purchases during the past year, and several new tracts have been thrown open, there are now probably over two hundred million acres of lands *ready* for native or foreign emigrants who desire a farm of their own, at the government price of $1¼ per acre.

Tennessee Lands.

The two articles recently published on the above topic, (one on page 102, April No., and one on page 133, May No.,) have called out a score or more of lengthy communications, both from Tennessee and elsewhere. A considerable portion of these we suspect to be from persons directly or indirectly interested in lands awaiting purchasers—some of these writers very evidently have an "ax to grind," and their communications have the go-by of course. The others are on file for such examination and use as we may have time and space for. As we have before remarked, we have no doubt that there are many fine tracts of land yet unoccupied in different parts of Eastern Tennessee, but in the multitude of *conflicting* statements presented, we find it difficult to locate them definitely.

In these days, in order to avoid being humbugged ourselves, and humbugging our readers, it is almost necessary to suspect a cat in every meal-tub.

Money, like manure, to do much good must be well spread.

Agricultural Humbug at Washington.—IV.

Washington White-wash—The Auto-Biography of an Agricultural Clerk sent around the Country at Public Expense &c., &c., &c.

In the former three articles under the above general head, we have pointed out some of the derelictions of our government in general, and of certain officials in particular, with respect to promoting the agricultural interest of our country. Among the leading causes of complaint, were the following:

I. That while over seventy-five *million* dollars have been annually expended by the general government for various purposes, only seventy-five *thousand* dollars (one dime out of every hundred dollars) have been even nominally devoted to the improvement of agriculture, over the whole country.

II. That even this pittance has been well nigh wasted, and in part worse than thrown away:

1. By intrusting the chief management of the agricultural department to an unskillful, inefficient person.

2. By the collection and distribution of many worthless seeds.

3. By the importation of seeds originally grown and now widely scattered here, and distributing them as new seeds from abroad.

4. By sending out many seeds carelessly labeled, thus producing confusion, and loss of time and labor, on the part of those who undertake to cultivate them.

5. By sending promiscuously to every part of the country those seeds which, in any case, are only adapted to particular localities.

6. By a great waste of seeds, great numbers of packages being sent off—free through the mails—which are never used for legitimate experiments.

7. By the appropriation of funds to useless trips to Europe of government employees.

8 By the preparation, at great expense, of a volume (Agr. Report of Patent Office) which, though containing a few good things, is, in character, infinitely below what it should be, as the leading governmental document of the country. [We have under investigation some curious items regarding the sources and prices paid, or said to have been paid, for articles, in the last Report.]

9. By printing extra copies of the "Report" at great expense, which have been sold, indirectly at least, to booksellers for a pittance, to be afterward hawked with a profit at the street corners, for less than half the original cost to the government.

With our knowledge of the way things are managed at Washington we had little expectation that the above allegations would be noticed *there*, and our chief object has been to arouse farmers themselves to assert their own dignity and importance, and not remain content with the sop of a few packages of seeds, often useless, or a Patent Office Report—proffered to them as a stick of candy to a child, to keep it quiet. Politicians have exceedingly short memories; they are lavish

of honeyd words to the "bone and sinew," *before* election, but *after* election, how few of them ever think of doing anything to promote the Agricultural interest.

But it appears our remarks have not been without effect, even in Washington, and a labored attempt has been made to counteract the force of criticisms like the above—though, as will appear, the very means taken to do this involves a worse humbug than any one previously pointed out. Let us see how the thing is done.

First, a Captain in the United States Army signs a letter addressed to the Chairman of the Congressional Committee on Agriculture. The chairman next signs a letter to the Commissioner of Patents, under whose care the agricultural department is placed—since this interest is not important enough to have a department of its *own*. The Commissioner sends back a communication to the Chairman, and the Chairman sends a letter to the Captain; and the whole is then published in the official organ, the "Union," and *copies of that paper are sealed up and sent at public expense* (*franked*), to many, and we presume to most, if not all the journals in the country. On the well-grounded supposition that this whole affair, in its conception and carrying out, is mainly the work of the person chiefly interested, it exhibits more shrewdness than we have hitherto given him credit for, though in this case, as in former ones, he has not fully covered his tracks, and has overshot the mark so far, in his autobiography, as to destroy much of the effect, even with the casual reader. Let us examine these documents (copies of which are before us), particularly the letter of Mr. Holt, Commissioner of Patents. We do not know Mr. Holt personally, but on the supposition that he is at all fitted for his station, we cannot suppose he drew up the fulsome eulogy on D. J. Browne, to which his name is attached; for no one but Mr. Browne himself could have given the minute statements concerning his personal career, dating back to 1822, and extending over almost half the globe, and occupying a full, closely printed, wide column, in the "Union." The charitable supposition is, that, in the pressure of other engagements, the Commissioner simply *signed* the document, without carefully considering the contents. [We may be allowed to state here, that we have no personal acquaintance with Mr. D. J. Browne himself, although we are informed in the document before us that he was engaged for half-a-dozen years upon earlier volumes of the *Agriculturist*; it was before we had any connection with or control over it, and we have scarcely heard his name even mentioned by the former publishers or responsible editors. We have only to do with him in his public capacity, as responsible for the governmental department over which he actually, though not nominally, presides].

The communication (signed by Mr. Holt) first states, that agents have been sent to Europe *only* three times at the expense of the Office. We have charged no more than this.

It is next asserted, without a shadow of documentary proof, that "the seeds, cuttings, &c., have been procured from reliable sources, the selections having generally been made with discrimination." This is one point denied. In discrediting the statements signed by the Commissioner, we do not implicate his integrity, for he has not had charge of this matter, nor any responsibility for it, until very recently.

The document frankly admits other charges we have made, respecting the manner in which *many* seeds have been distributed. We quote:

"....It may not generally be known that the apartments in the Patent Office in which the labor of packing the seeds has been performed were, perhaps unavoidably, *for several years accessible to many persons other than those properly engaged therein*—indeed to the public, and that the Commissioner's frank, in some instances, *was obtained and used for carrying through the mails seeds not selected by the office. From lack of knowledge on the subject*, or through inadvertence, individuals were liable to *send out seeds at inappropriate seasons, or to localities to which they were not adapted*, and cases have been known in which *franks were used to cover seeds procured from other sources*, while there is cause to suspect that in some instances frauds were practiced with a view to throw discredit upon the office...."

This is precisely what we have charged, (the italics are our own), and though it might not "generally be known," we have been cognizant of this "lack of knowledge," "inadvertence," and *inefficiency* in the said department, and have been trying to correct it. But we accept with pleasure the following statement:

"....During the past Winter and Spring, however, a salutary reform has been realized in these particulars: The rooms in which the operative force has been employed have been entirely private; the work of packing and distributing has been executed under the supervision of a responsible clerk, assisted by men of intelligence and experience; and to avoid mistakes, seeds of only one variety have been opened at a time, for putting up. In short, the utmost care has been exercised to secure accuracy, justice and dispatch in these important duties....."

This is just what ought have been done long ago, to have failed in doing which, would have cost any private dealer in seeds his business and reputation, as it has turned out with our government "seed store."

The next paragraph suggests other improvements in the mode of distributing seeds, which, if carried out, will prevent, in a measure, the wholesale waste of costly seeds that has constantly occurred, till very recently, at least. It will be a decided improvement if, for example, the grains bought at great expense, for experiment, are put into the hands of efficient agricultural societies for trial, rather than, as has been alleged, franked through the mails by the bagfull, to feed or fatten somebody's favorite animal.

The fifth statement, signed by Mr. Holt, whether drawn up by himself or Mr. Browne, is evidence enough that the writer has not the *right kind* of intelligence and judgment to fit him to have even nominal charge of a national agricultural department. What say the great mass of intelligent, *practical* farmers, who have read, say the last two or three Patent Office Agricultural Reports, to such an endorsement as this:

"....No doubt can exist as to their usefulness or acceptability. No series of documents, indeed, have ever emanated from the government which have been more highly prized. They are well-approved repositories of useful facts, peculiarly suggestive in their character, and prepared with great care, assiduity, and acknowledged ability.'

That will do, considering that the endorsement comes direct from the Department where they originated. The writer cannot have read the agricultural press very carefully, nor heard the almost united expressions of the intelligent agriculturists of the country, for four or five years past. We will not delay on this point, as an analysis of the merits, or rather demerits of the latest printed report, was given in the January number of this journal, page 5.

The sixth, and closing part of the article under review, is of great length, and is really the most amusing—if it were not absurd and ridiculous—public document we have seen in a long time. We shall, for want of space, reserve its discussion for another article, requesting our readers to preserve the above carefully to read in connection with what is to follow.

Study to live as you would wish to die.

Sink Slops as Manure.

In last volume, page 157, (July No.) we gave a pretty full article on this subject, with directions for making cheap, neat reservoirs, bailing out, &c. An associate sends the following hints on the same topic:

English farmers put a higher value upon liquid manures than Americans do. They apply many fertilizers, in a liquid state, through sprinklers, and with a degree of care and labor that here would be thought excessive. There is philosophy in this method; for every one must know that manures are of little benefit, except as they are dissolved by rain, and presented to the roots of plants in a liquid form.

We refer to this principle now, merely to show that the use of refuse water from the sink is a rational one. This liquid is rich in fertilizing properties, and is in just the state to furnish immediate food to vegetable life and growth.

An excellent mode of securing the sink-wash for use is, to set an old oil-cask in the ground, on the north side of your shed, under the spout, and cover it with a lid. This will prevent the cask from skrinking, and if a little charcoal is thrown into it once a week, will prevent all unpleasant smells. Apply the wash every few days, to cucumbers, melons, squashes, raspberries, grapevines—in short, to every growing thing, and the result will amply pay for the trouble.

Another method is to conduct the slops into a vault, where they will be absorbed by muck, leaves and other suitable ingredients of a compost heap. If possible, make this vault a permanent arrangement. Dig a hole two or three feet deep, eight or ten feet square; lay up the sides with stone or brick laid in water cement. If you hesitate at this trouble and cost, dig the hole and surround it with firm clay, or slabs, or old timber. Put a layer of saw-dust, turf, or muck at the bottom, and then let the sink-slops pour in. Add absorbents from time to time, as needed. When the vault is full, cart away, and then commence filling up as before. Almost any farmer can make twenty dollars' worth of excellent manure every year, in this way.

Digging a Well.

"And what has the *American Agriculturist* to say upon a subject which every one understands so well as that?" Not much, to be sure; only that, mind and look a little to the season, and the state of the weather when it *is* done. A dry season, and the dryest part of the season is the best time to dig a well. We have known many a well dug "down to water," and enough of it, too, at a time, when in a rainy or other season, the springs and streams were full; but after being stoned up, curbed, and finished, in a few weeks failed altogether, when it either had to be taken up and sunk deeper, or if on rock, drilled down several feet, to give a permanent supply of water.

The month of August is usually the safest time to sink a well. The hot season has then generally dried up the surface streams and springs, and left those which percolate deep and silent through the earth in their full and natural flow, and when reached, they then scarcely fail to yield a permanent supply. Before digging the well, the stone or brick for walling it should be on the ground, and so placed as to be ready at a moment's notice for use, as we have known wells lost, from a sudden break of the earth or rock at the bottom, and the rapid flowing in of the water, driving the laborers out, and filling up to a hight even above the tools they wrought with. And so strong was the

fountain, that they could not exhaust the water afterwards. Such cases do not often happen, we know, but it is well to provide against them, and after water is found in full supply, the quicker the well is walled up the better.

How to Build a Log-House.

According to the request of a correspondent, and as a matter of interest to many Eastern people, we give a brief description of the manner of doing an indispensable labor in the first settlement of a family in the "woods," where saw-mills are unknown, or if common, not always available in furnishing the primary want of a newly removed pioneer or settler—a dwelling.

We will premise, however, that there are two kinds of log-houses—one, the unadulterated rough, round-log tenement; the other, the logs hewed down on two sides, set edgewise each upon the other, and called by distinction, the "block house." This is, ordinarily, the second degree in luxury from the primitive habitation of the first backwoods settler. We have had divers experiences in each of these descriptions of house-building; accounted ourselves a master workman, even among the craft, and after five-and-twenty years interregnum in that neccessary branch of architecture, firmly believe that we can yet "carry up a corner" equal to the best of their builders.

To commence: "The proprietor," selects his site, cuts down the heavy trees within "falling" distance of the spot the future house is to occupy, and clears away the stumps and underbrush close to the ground. The day fixed for "the rolling," his neighbors—to the number of ten, a dozen, or twenty, according to the magnitude of his building, and the extent of finish to be given to it—are invited; and, after an early breakfast, with two or three yoke of oxen or spans of horses, as they may own them, assemble on the ground for action. The company are then called together, and some one, usually conceded by the company to understand the matter thoroughly, is agreed upon as "boss" for the day. Four athletic, active choppers, each with a true eye in his head, are then selected as "corner-men." There are more, if the house is to have log partitions—one to each "butt" or at the intersecting point where the end of the transverse logs lie upon the bodies of the front and rear of the main ones of the house, as in fig. 2.

A man with an ax stands upon each intersecting point to "carry up the corner," the foundation being first laid by a course of heavy logs of dura-

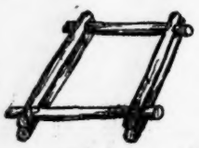


Fig. 1.

ble timber laid flat on the ground, and on them the sleepers for the main floor; or, if convenient to be had, a large flat stone is laid under each corner of the building, and, if a double house, under each partition. This preliminary labor is sometimes done a day or two previous, by the owner and the help of a neighbor or two, but in most cases is left for the day when the rolling up of the house itself is to be performed.

Well, the company assembled—the men partitioned off, each to his allotted branch of labor, into "boss," "corner men," "teamsters," and choppers—they commence work in earnest. The boss selects the trees, the choppers fell and "butt" them at the lengths which the boss marks them out; for he, with ax and pole in hand, must be round among them constantly, to see that no mistakes are made in these particulars. Or, sometimes, when a very rough house only is intended, each chopper selects his own trees, and draws his own measurement by aid of his axhelve, or "paces" it off, and even lets the butting go; but the measurement and butting is the better way, usually. As fast as the trees are prepared, the teamster, with handspike in hand, is ready to hitch on to one end, and his cattle, with a wonderful knowledge of the kind of work from being used to it, are off in a moment; and,

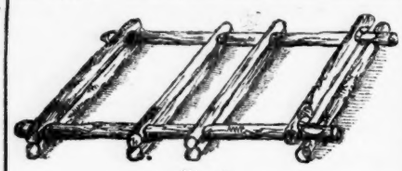


Fig. 2.

after one or two logs are hauled, they stop with great accuracy at about the very point where the logs are required for rolling. It is also well understood by the teamsters—the word being given by the corner men as they proceed—whether the but, or top end of the log is to go forward, for the house must go up on as near a level as possible. This is accomplished by putting the but end of a log at the corner which happens to get the lowest.

The log being at its place on the ground, four or more men, as may be required, with 'handspikes' (levers), and their stout arms and shoulders, roll it up on 'skids' (pieces of timber with one end on the ground, and the other on the log

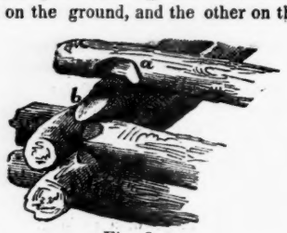


Fig. 3.

last put up). When breast high, it is carried further up by aid of crotched poles cut from forked saplings. When nearly up, to get it over the projecting corners, the corner-men, with handspikes or larger levers placed across the last laid log, raise it over the projecting ends of the transverse logs. They lay it on its proper side for "notching" to fit the bearing logs which have been previously "saddled"—that is, scarfed down from the top on each side, like this letter Λ (*b*, fig. 3). They then cut into the last received log, a corresponding notch to fit closely upon the other, thus, V (*a*, fig. 3); then roll it over, and, if properly done, it fits snugly, and, with the aid of a correct eye, the corner is carried up perpendicularly from sill to plate.

In the process of going up, the places for the doors and windows are either marked in the logs by the corner-men by cutting a scarf into them, or cut out altogether, as they may have time. When the first, or lower story is up to a sufficient hight, the beams are laid on, scarfed in by notching and saddling, according to the extent of finish to be given to the house. The bearers, however, are previously flattened, so that their upper sides may receive the floor when laid upon them. Thus the house goes on until the proper hight is reached; and, if a very rude one, the gables are then laid up in the same manner, only that the gable logs are scarfed off at the ends with a slant to give the roof the desired pitch. The rafter logs, laid lengthwise, are notched upon them, so that when finished with its ridge-pole, it is the perfect skeleton of the future cabin, in all its majestic length, breadth, hight, and proportions.

Thus, the rolling is finished, and, according to its magnitude and extent of hands employed, may take only a forenoon, or the entire day. This heavy chopping and lifting, if at a regular "Raising," is seldom done without at least something good to eat, and it used to be something to drink about once in an hour or two—a custom happily gone out of fashion, in part at least. Then comes a most vigorous and hearty dinner of baked pork and beans, and other substantial nutriment, at "noon-time," eaten on a clean basswood, maple, or hickory chip, with jack-knife for carver, and fingers for forks, a merry crack of jokes, and a generous "nooning" afterwards. A grand time we used to have at these same log-rollings, many and many a day. We have, at such gatherings, witnessed repeated jovial displays of wit, joke and glee, the memory of which will only escape when life goes out. We have carried up many a corner, where young men rolled up the logs to us who have since become distinguished in agriculture, in commerce, in the halls of legislation, at the bar, on the bench, and in the pulpit—no "border ruffians" either, albeit inhabiting a new country, and blocking out their future fortunes, as pioneers of great and flourishing States and communities.

If the labor consumes the day, a bounteous supper is provided at a house near by—if there be one—if not, each tired laborer "homeward plods his weary way." The next day, or soon afterward, the owner returns with an extra man or two to assist him, and in the course of a day or two finishes up the house, by cutting out doors and windows, laying the floors, and putting on the roof. In the absence of boards, the doors and floors are made of "puncheons," that is, logs *split* into short planks. The roof is covered either with boards or newly peeled bark, laid lengthwise from the ridge-pole to the eaves, and battened, to keep out rain and snow; or, more frequently, perhaps, the roof is covered with thin staves split from oak, laid on and held fast by poles which are withed at the ends, to keep them in place and firmly pressed upon the staves to make the joints close. If there be time, the inside logs are hewed down to a face, the cornermen, or an extra hand or two having "scored" them with axes as they were rolled up. A clay hearth is laid at one end, a chimney, built up with split wood and clay, and the house is ready to move into, in a day or two, at farthest. Such is the history of a pioneer log-house in America.

Now, to such of our readers as were born and bred in a ten or twenty thousand dollar mansion, with furniture and trimmings to match, if any, haply there be, and who cannot imagine how anybody good or great can have abided in such an humble domicile as this, we simply tell them that sundry Presidents of these United States, and many illustrious statesmen, and others distinguished in all ranks and professions of American life, drew their first breath, and lived many years within the humble walls of a LOG-CABIN! But, they did not stay in them always. It is unnecessary to tell of their progress. We all know their history, and it is, perhaps, to the very hardships and privations of their early lives, that we are indebted for the beneficent labors and enduring fame of these illustrious men. We may speak of the "block" house hereafter.

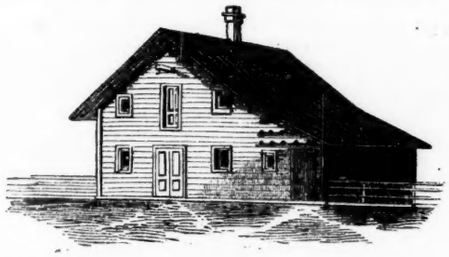


Fig. 13—PIGGERY AND POULTRY HOUSE—ELEVATION.

Farm Buildings....V.

PIGGERY, AND POULTRY HOUSES.

We have combined these separate accommodations into a single building, because they are so intimately connected in their feeding arrangements as to promote both their convenience and economy.

The elevation shows a building, the upright part of which is 32 feet square, with 14 feet posts from the sill to the plate. The ground story is 8 feet high, and the chamber 5 feet under the eaves. The front door enters a room, or area, 12x24 feet, in which is placed a furnace, or stove, with a large boiler, and vat if necessary, for cooking food. The pipe of the furnace leads into

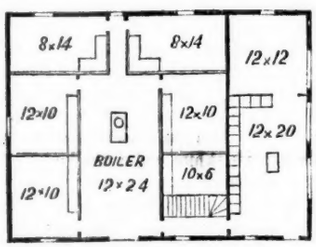


Fig. 14—PIGGERY AND HEN-HOUSE—FLOOR PLAN.

the chimney above, which rests on the chamber floor, and is entered through a crock, or thimble. On the sides are styes for the pigs, with a small sliding entrance door, and feeding trough to each—and a passage leading through the back side to a yard in the rear, where the swine can be turned at pleasure. Over the whole is the loft for depositing feed, as corn, or other grains, meal, &c., and a trap-door immediately over the vat, or boiler, into which it may be thrown through a spout, for cooking—our belief being that cooking food is by far the most economical way of expending it.

The windows, as shown in the plan, give sufficient light; or some of them on the sides may be dispensed with, and sliding board windows substituted to ventilate the room, and pass out the offal from the pens. Over the chamber door is a tackle-beam for hoisting bags from the wagon or cart below, to save carrying them up the stairs inside, thus making the accommodation complete. It is scarcely necessary to say that the pens inside can be changed to any size, larger, or smaller which convenience may demand; or that the size of the whole building may be increased, or contracted—the *plan* or *principle* of its construction being the main thing submitted.

Next the piggery partition is the poultry house, 14 feet wide, with a feeding box in the front room, tiers of laying boxes on the side, and end, and a rear room for roosting bars, or poles. A floor may be over head, or not, as may be convenient. If so, it is 7 feet above the sills, and may be occupied for laying, roosting, or other purposes connected with their accommodation. In the front, next the eaves is a pigeon house, arranged as we have described it elsewhere, and which we here insert to show that the birds can be placed here if necessary.

Over the whole is a broad, hanging roof of a third pitch, or 11 feet elevation over the upright part, or piggery, and a quarter, or 7 feet pitch over the poultry house. On the East or South front, as may be, are three large glass windows to give abundant light, and sun to the fowls in cold weather, and a stove may be placed there, if necessary to warm it, with the pipe leading into the chimney through the partition above.

We have thus connected the poultry house with the piggery, that the fowls may be fed with cooked, and warm food as the pigs are, believing that it is quite as economical for one, as the other—particularly in fatting them. If necessary, one or two of the pig-styes can be slatted, up to the chamber floor, and turkeys, chickens or geese, put in for feeding, and the whole thing done under one and the same operation. We know that one-third of their food can be saved by cooking, and that they will fatten in two-thirds the time required when fed on whole grain; and if any considerable number are kept, the saving will be important. An ample yard, with a high picket fence, can be thrown from the poultry side of the building.

PIGEON HOUSE.

This is a very cheap and simple elevation and floor plan, yet susceptible of any degree of architectural ornament that may be given it. We give the plan only, with a description of its arrangement, from which our readers can determine the extent of the size, and accomodation they choose.

Fig. 15—PIGEON-HOUSE—ELEVATION.

Four posts of durable wood, six or eight inches square, and planted firmly three to four feet in the ground, and six to eight feet apart, according to the size of the house, and twelve to fourteen feet high. Seven feet above the ground, four sills, 6 inches square, are morticed into the posts, and four morticed caps laid on to the tenoned tops, thus forming a box frame. A short post is then inserted into each end cap, or plate, two thirds as high as the building is wide, and a *gain* cut in each to receive the ridge pole, which may be a 3x4 piece of scantling, on which the peak of the roof is laid. The roof has a third pitch, like our other roofs, and spreads wide over all, to keep the house warm and dry. It may be made of rough boards, or shingles, as desirable. The sides are tightly boarded up, weather proof; a firm tight floor is laid, and a sizeable door, hung with butts, on the rear. Thus, then, the outside is finished.

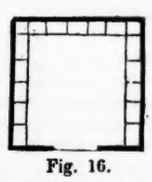


Fig. 16.
PIGEON-HOUSE—INSIDE.

Then mark out, and cut with a gimlet saw, three or four tiers of holes, 4 by 3 inches—plenty large—as in the picture, with a lighting shelf 6 inches wide just below each tier, both outside, and inside. This done, build a range of boxes around the front, under the holes, and on two sides, and in tiers one above the other a foot apart, from floor, to roof. These boxes should be 6 or 8 inches wide, 8 or 10 inches long, and the sides 4 to 6 inches high. In these the pigeons will lay, and hatch, all as one family, and increase to your heart's content.

The door on the rear is approached by a moveable step ladder, which never should be left there when not wanted, as rats, or other vermin might possibly reach the birds, although, if built tightly, they would have but little chance. If the climate be cold, a lining of boards with 3 or 4 inches space between it and the outer boards filled in with tan bark, or saw dust, would not be amiss, as it would keep the room cooler in Summer, and warmer in Winter.

Elegant Leisure.

The above may be a strange term to introduce into *this* paper, but our readers will understand its drift before we are done. In this generally prosperous country of ours, we have a great many considerate men, who began life with frugal, industrious habits, and ultimately accumulated handsome estates, and who have had "gumption" enough, when arrived at an age when the cares of active business become irksome, to secure what they have gained, and retire to spend their remaining days in the quietude congenial to their tastes, or inclinations. Many city dwellers, whose early associations were with the farm, or garden, or who were born and educated in the country and retained throughout their business career their early love for things rural, choose them a snug farm not far out of the town, or city of their business residence. They retire upon this, intending, either by its cultivation, or in some congenial occupation to spend their time peacefully, and agreeably, as either domestic, or financial circumstances may permit. To the good sense of this we most cordially subscribe. There can be nothing safer, happier, and more fraught with the resources of substantial enjoyment; and such a conclusion we recommend to all who possess the taste and faculty of so accommodating themselves to a change so different from the bustle and turmoil of active business, to a life of comparative ease, and physical inactivity.

Yet, this latter mode of life need be no inducement to idleness. The active *mind* can always find a sufficient number of objects to give it contentment, and the *hands* enough to do to give health to the body. It is only in the misapplication of one's means and time in the retirement they have sought, which has proved the bane of many a one's choice—that of devoting his time to "Elegant Leisure."

These well intentioned, excellent, and somewhat ambitious men, in society as well as business—who are not of the "Sparrowgrasses," either—have an idea that the habits of *town* leisure can be carried into country residence, and enjoyed with equal relish and convenience. They

fit up a fine country place, surround themselves with all the appliances of town luxury, and set out to continue their town society there, having little else to do but enjoy themselves, and their friends at will; to circulate, as in days past, with town associations, things, and people. Their occupation is "leisure"—their living "elegant," we concede. But what else!

We are not about to condemn, or speak harshly of such as have adopted a life of elegant leisure in the country, and whose minds and circumstances, pecuniary and domestic, are such as to permit them to enjoy, or carry it out in full. But this latter is hardly a supposable case; and having witnessed several lamentable failures of the sort, we know something about it, not in our own experience, but in that of others.

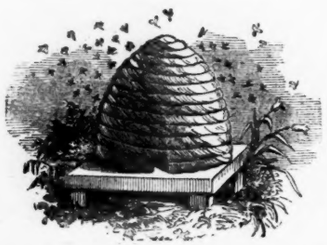
American life of any kind, to be either useful to anybody, or satisfactory to the holder, should have a definite, positive object in it. We have no orders of nobility, sustained by large fortune, and perpetuated by primogeniture. We are born on an equality, as to political and natural rights; and the acquirement of knowledge, or substance; and good sense in using them, if we may possess them, makes the man, and gives him his position in all classes of society with which he associates. If a retired man of any profession or trade, go into the country, let him be something *there*, as he was in the town or city. Let him be a farmer, gardener, or pomologist. Do as much, or as little as he pleases at it—but be something. If he sets up "elegant leisure," he'll have a hard, and an expensive time of it. He will "keep boarding house" at an enormous cost, and get no pay for it. Let his family be ever so happily disposed, he will have any amount of domestic discord and difficulty—in the worry of servants, and the vexation of striving to live in extraordinary style, while every body in his neighborhood is living quietly, and at ease. In short, his career will be a brief one, and himself and all attached to him glad to get out of it at the first possible opportunity. It will cost more than the same sort of life in the city itself, because more distant from his wants, and necessities; and it will wind up with a Flemish account at his banker's, and many a heart-ache with wife, and daughters, who will find that they have sweated and toiled without end for thankless hundreds who have enjoyed their hospitality for nothing, and can give no recompense in kind, or otherwise. They have enjoyed many friends, it is true; but at the same time have given sustenance and favor to secret, or open foes. Hospitality and kindness in private life among one's real friends, are apt to be thought no virtues in one who sets up a pretentious style of living, out of place, and they beget no gratitude in the heart of the recipient.

On the other hand, he who goes into country retirement after a career of active toil, merely to exist, to pass away the remainder of his days in doing nothing, usually makes short work of it, and dies early. Having nothing to do, disease soon makes his acquaintance, and with death at its elbow, they make a rapid finish of him. Long years of activity can not be discarded with impunity. "Better wear out than rust out," is an old proverb. Occupations may be changed, but not habits, so far as bodily and mental exercise are concerned. A merchant, mechanic, or professional man may turn farmer, gardener, or orchardist, with perfect impunity, even to an increase of years and the attainment of greater wordly happiness; but employment, congenial to the mind, and the due exercise of the body is indispensable.

Moon-Struck Agriculture.

The following paragraph went the rounds of the papers, not long ago, evidently by a lunatic writer: "A rail-fence, built in the 'old of the moon,' will sink into the ground eight inches in a few weeks, while, if built at another time, it will not sink at all. Shingles nailed upon a roof in 'the new of the moon' will soon throw out the nails. Corn planted in the new of the moon will beat all other corn, and sheep sheared at that time will yield heavier fleeces than those sheared at other periods."

Why did not this "book-farmer" add that a load of cobble-stones drawn at the new of the moon, will make twice as many rods of fence as one drawn in the old of the moon? Or, as a co-temporary says: "He might have added that wood drawn at the new of the moon will afford twice as many cords as if drawn at other times."



Wonders of the Bee Hive....XIII.

ENEMIES OF BEES.

The instinct of bees leads them to repel intruders from their hives without ceremony, whenever it is practicable, and the sentinels at the doorway are constantly on the watch to investigate the claims of each insect that applies for admission. They are not always successful, however, in guarding the hive from its enemies. Sometimes an unwelcome guest may be stung. A slug-snail once met this fate, and then the bees, unable to remove it from the hive, covered it entirely over with propolis. A shell-snail found access to Reaumur's hive, and adhered closely to the glass by means of its slime. So the bees formed a border of propolis around the edge of the shell, and thus fastened it immoveably, relieving themselves of all further trouble about it, and consigning it to an unexpected tomb.

THE MOTH.

By far the most troublesome insect that infests the bee-hive, is one that has been known since the days of Aristotle. It is the bee-moth (*Tinea Mellonella*,) sometimes known as "the gallery moth" from the mode in which its larva constructs its web. The moth lies quiet by day, but as night approaches may often be found flitting about the hives from the middle of April till September, seeking to enter for the sake of laying its eggs where the worms immediately upon being hatched will have food at hand suited to their wants. It is only the female, however, that has occasion to enter, and she differs so much from the male in size and color, that one would not suppose them to be related. She is larger, and of a darker hue, and very quick in her motions on the wing as well as on foot. A careful search by day may bring her to light, quietly reposing under some sheltered board in the neighborhood of the hive, and resembling so much a sliver of dry wood, as easily to be overlooked.

If once she gets access to the interior of the hive she does mischief, not by devouring honey, but by depositing her eggs in great numbers; and thus obeying the instincts of nature, she prepares a home for her offspring, just such as they need. The eggs are insignificant in appearance; we show a collection of them of the natural size, and also magnified, in fig. 18.

a. *b.*

Fig. 18. Eggs of the Bee Moth, *a.* natural size, *b.* magnified.

The mischief is done by the worms that are hatched from these eggs by the warmth of the hive. The little worm immediately upon leaving the egg begins to eat, not the *honey*, but the *wax-comb*; and as it grows it weaves around itself a long cylindrical web or gallery, in which it can move backward and forward with great ease, and which the bees are loth to meddle with. Its web may be seen in fig. 19, which

Fig. 19. Web spun by the larva of the Bee Moth.

shows how it is covered with excrements, and arranged with branch galleries leading off in other directions. When the comb is full of honey the worm confines its devastation chiefly to the covers of the cells; but when they are empty or occupied with brood, it penetrates through the comb, and makes sad havoc as it works its way from sheet to sheet, leaving its filthy and impenetrable web behind it, and crossing its own track or doubling upon its course. Sometimes, even, it is found in honey put by for family use, or taken to market, which then reminds one of the manna that "bred worms" if kept till morning. The worm having eaten to its satisfaction of wax, and being ready for the chrysalis state, weaves a cocoon, and after a while comes out as a moth. Frequently it leaves the hive before preparing for this change, and may be found in cracks and crevices out of the reach of bees. Its appearance at this stage of life is represented in fig. 20.

Fig. 20. Larva of Bee Moth, full grown.

It has now done its mischievous work, but may presently have occasion to seek admission to the hive again, as a moth, to deposit its eggs for the next generation.

This is the most annoying pest to which bees are subject. It has done more to discourage bee-keeping and to fill apiarians with disgust, than anything else connected with the hive. "The worms got in and killed the bees," is the common story told by many who have a stack of empty patent hives laid by in the barn, and who shake their heads at the folly of those who expect to turn bee-keeping to good account.

The carelessness of bee-keepers is a great help to the moth and a great injury to the bees. It is very common to leave large pieces of comb and abandoned hives in places accessible to the moth, where its eggs can be deposited in perfect security. The result is, that hundreds of worms may be matured in the early part of the Summer which soon are changed into moths, to whose attacks the hives are subject at a later season. The progeny of a single moth may thus become so numerous that the bees cannot guard themselves against their entrance. A moth is supposed to lay four or five hundred eggs. To give her, early in the season, uninterrupted possession of a nest where its young can feed in peace, is to insure a rapid and pernicious increase. Last Summer we saw

a deserted hive full of comb, in which were hundreds of worms and cocoons. The owner had been pursuing a let-alone policy, and was about as much of a public benefactor as if he had sown his garden with Canada thistles. He had the good sense, however, to condemn the whole concern to the flames as soon as he saw the evil he was bringing on himself and on the neighborhood. It is a wrong idea that the eggs of the moth are hatched only by the heat of the bees, and that there is no danger if the warmth of the hive is intercepted. Though unable to affirm that the worms may be hatched and matured in the open air, exposed to the rain, dew and sunshine, we know that in sheltered places, in upper boxes, and in houses, there is nothing to prevent their coming to maturity, if they have their appropriate food.

A strong colony of bees in a well constructed hive can protect themselves. They can guard the entrance, and can cover their combs sufficiently to avert all danger. But a weak stock works at a disadvantage, and especially if their hive has cracks and crevices where the young of the moth are somewhat out of the way. It does one good, however, to see the promptness with which a worm is drummed out of the camp, when the bees have once brought their forces to bear upon it.

There are other insects that give trouble to the bees within the hive, but not sufficiently important to be noticed now: and there are enemies without the hive, of various kinds; but notwithstanding them all, the bee flourishes and multiplies exceedingly, a comfort and blessing to man, and a perpetual witness of the power and wisdom and providence of the Creator.

Making Bees Swarm Artificially.

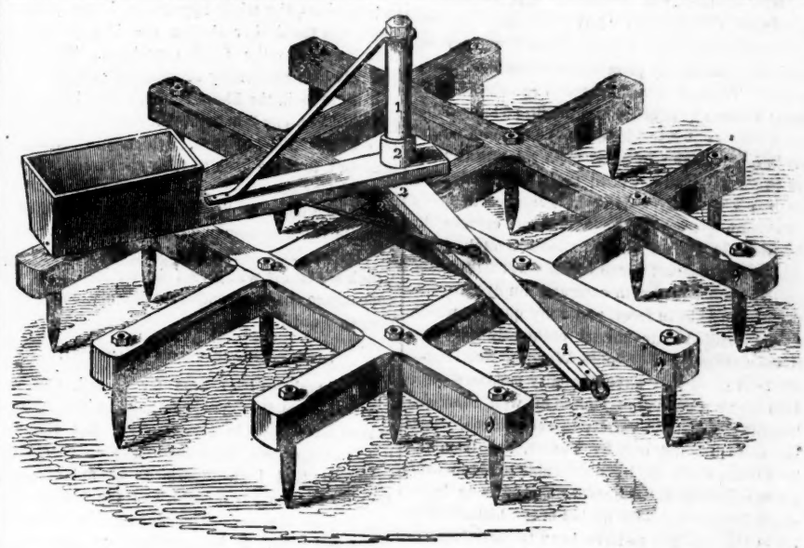
In our last volume, page 129, we suggested a mode of securing artificial swarms, naming, as some of the advantages, that this plan enables the bee-keeper to obtain the new swarms at a convenient day and hour; secures regular and rapid increase; obviates the danger of the uniting of two swarms going out together; enables those selling the increase of their stock to furnish strong swarms at any time agreed on, and in short saves time, trouble, and vexation. The outline of the plan described, which is essentially that of Mr. Langstroth, we re-copy for the benefit of several recent inquirers. (These directions are of course too late for this season, wherever the bees are entirely done swarming.)

After the drones have made their appearance, and when the bees are collecting honey freely, choose about the middle of the day when the bees are abroad in great numbers, and gently lift the hive to be operated upon and turn it *upside down* upon the ground, several feet distant from its usual place. Put over it a box as nearly its own size as possible, having within the box some slats or convenience of clustering, and holes covered with wire-cloth for ventilation; taking care to cover all the cracks and entrances with paper or cloth so that not a bee can escape. Next, place an empty hive on the stand as a decoy to catch the bees returning from the fields. Then proceed to drive the bees out of the first hive into the upper box, by constant drumming with the hands upon the sides to which the combs are attached. The bees, finding escape impossible, proceed at once to fill themselves with honey, and in the course of fifteen or twenty minutes will retreat with the queen to the upper box. When the greater part have gone up, the box is to be quickly lifted and placed upon a bottom board so as to confine the bees, and yet furnish them with air If this forced swarm is to be removed to the distance of a mile or more, it should be treated exactly like a natural swarm, while the first hive is set back in its original place instead of the decoy; the bees from the fields will be glad to regain their home; a new queen will speedily be provided, and the maturing brood will make good the place of those expelled.

The plan thus far described, we have pursued with gratifying success. If, however, the bee-keeper wishes to retain the forced swarm, and cannot send it away for some time, something more must be done. Mr. Langstroth confidently recommends a process which we have not yet tried. He announces as a new and important discovery, that "nearly all the bees which have entered the decoy hive, if now presented with their own, will adhere to it even when its location is changed."

His advice, then is, *after the foraging bees have returned* to the old hive, now standing in its former station instead of the decoy hive, take up this old hive and put it in a *new* place, and in the old place put the hive prepared for the forced swarm. Shake out before it, upon a sheet, the bees forced into the box, and they will quickly ascend and make themselves at home in their new quarters; and having a fertile queen will construct worker cells, and do in all respects as well as a natural swarm. If, however, the new swarm should be kept in by a storm, or by a temporary failure of the honey-harvest, it would be prudent to give them a little food.

Jonas Scholl, Fayette Co., Ind., referring to the above, inquires if it would not do as well to drive the bees immediately into the hive they are to occupy instead of first getting them into a box; and further, would they be likely to return to the old hive if removed a hundred yards or so; To which M. Quinby, (author of *Mysteries of Bee-Keeping explained,*) replies: "You can drive them into the hive you wish them to remain in, providing the hives are of similar size at the bottom. Unless they are carried away more than a mile, the most of the swarm will probably return to the old stand. If it is not convenient to move them that distance, a good way would be to set the new hive on the old stand, and the old hive within two or three feet of it."



Buckeye Rotating Harrow.

We present herewith an engraving of a new harrow, which certainly appears to be a decided improvement over anything previously constructed. We are sorry not to have seen one in actual operation before this, but we have the good authority of our friend, Thomas Brown, of the Ohio Farmer, who in answer to a private letter of inquiry, assures us that he *has seen it work*, and that it merits all that can be said of it. An examination of the construction as shown in the illustration will enable any one to understand its peculiarities and its obvious merits.

First we have the tooth bars, halved into each other at the crossings of the pieces, and held together by the teeth, which are fastened by a screw and nut upon the top. An upright shaft (1), is made fast to the centre of the solid cast plate (3), which is not very plain in the engraving. Around this shaft is the movable thimble (2), to which is fastened the draft bar (4). Attached to this same thimble (2), is a side bar, upon the end of which is a box for holding stones or other weights. This is kept from sagging by a brace, which is supported by a ring placed at the top of the upright shaft (1), and turning upon it.

It will now be seen that the weights upon one side will press down the teeth more upon that side, so that when the harrow moves forward, those teeth will be held back more than upon the other side. This will give a constant rotation to the teeth, so that they will move crosswise as well as forward, and the same side of a tooth will now be on the front and now in the rear. An important end thus gained is, that there can be no clogging by grass or clay. This will avoid the furrowing usually made by substances gathering upon the teeth. The zigzag or side motion of the teeth will also break up and pulverize the soil better than a simple forward motion. The harrow can be made to turn in either direction, by unhooking the horizontal rod, and swinging the weight box to the other side.

The inventors, Messrs. Dewitt & Barrett, of Cleveland, O., claim that "this is the strongest harrow built, and does not cost as much as a common jointed harrow of the same size; that it can be operated like the common harrow, by simply taking off the weight; that the teeth sharpen themselves by the movements in every direction, &c. See their card in advertising columns

American Cattle....V.

[*Continued from page 173.*]

THE AYRSHIRE.

We have never heard the most partial advocates of the Ayrshire, claim for this breed any thing beyond a rare eminence as a dairy cow. We have never seen a steer, or a bullock among the scores of Ayrshires which we have known in several different States, and the Canadas. As a beef animal, or a working ox, they are never mentioned. But having achieved a high reputation during many years past for her feats at the pail in her native land, the cow is still celebrated by her keepers, since her transfer to America. It is the *cow*, then, of which we are chiefly to speak, and we will strive to do her justice.

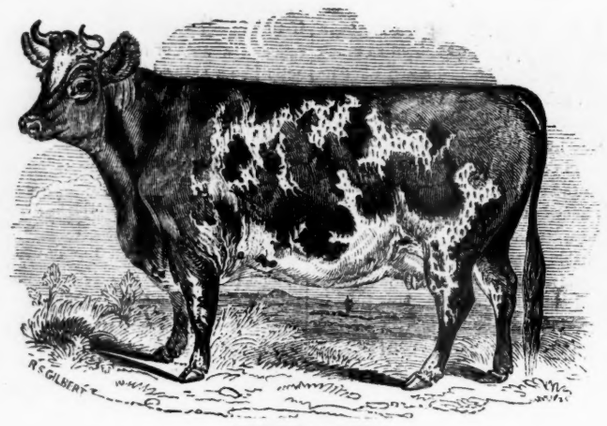
HER HISTORY.

Youatt, in his history of British Cattle, says—writing in the year 1833.—"The origin of the Ayrshire cow is even at the present day a matter of dispute; all that is certainly known about her is, that a century ago there was no such breed in Cunningham or Ayrshire, in Scotland." He quotes the valuable work of McAiton, on the "Dairy husbandry of Scotland," and Ayrshire in particular, to show that "fifty years ago," the cattle of Ayrshire, were a diminutive, ill made race, and not particularly prized for their milking properties. Through several pages of *speculation* as to what crosses have composed the breed known distinctively as "Ayrshires," at the time he wrote, and an elaboration of many facts relating to their yields of milk and butter in the Ayrshire dairies, he leaves the impression that the present breed has sprung from a succession of crosses by Short Horn bulls upon the native Scotch cow; that the produce of these crosses were interbred among themselves with care and an eye to improvement both in form, and dairy quality, which finally resulted in an animal eminently fitted to the climate and soil of South Western Scotland—the best of all they have, for dairy purposes—and become by a persistent course of well managed breeding, a distinct variety in themselves. Such seems to be—not only by Youatt, but from the best information we have been able to obtain from intelligent Scotch farmers who profess to know any thing about it—the upshot of her history. The effort appears first to have been to introduce the Short Horns, and substitute them as a dairy cow in place of their own inferior race. That failed; but the cross of the Short Horn was successful; and hence the breed.

About twenty years ago, they first made their appearance in America—first imported into Boston, Massachusetts, both by some Agricultural Associations, and one or two fine public spirited gentlemen who wanted cows and bulls of decided dairy qualities for their own use, and the improvement of their native stock. These were followed by several other importations into Massachusetts, and New-York, at different times, and these successfully bred, their descendents have been scattered into various other States, so that now the Ayrshire is a name well known among our breeders, and others familiar with the different breeds of improved foreign cattle.

DESCRIPTION.

On the first view, by a judge of the different varieties, the Ayrshire would be called a diminutive Short Horn, in the main, so nearly in figure, color, and prominent characteristics do they approach them. They are about the size of our common stock, compact in form, *exactly* built for a dairy cow—light forward, and heavy behind—with an exceedingly homelike, domestic appearance. In color, they vary, from a brown, running in lighter shades up to red, and into a pale yellow, alternated more or less with white, in distinct patches, rarely mingling into roan. In late importations, the white appears in larger proportions, and the darker shades are less prevalent than formerly—the fashion perhaps. There is scarcely that uniformity of appearance with them that there is in the Short Horns, some being decidedly "Scotchy" in look, while others decidedly take to the Short Horns, evidently showing a tendency to trace back to their ancient lineage on one side, or the other. Yet, they appear to hold true to the dairy quality throughout, which, like a "gentle voice in woman," is an "excellent thing" in a cow. The portraits of a cow, and a bull, which we insert will give a better idea of their appearance than any elaborate delineation we can give in words.



AYRSHIRE COW.

THEIR ECONOMICAL USES IN AMERICA.

The Ayrshires have thus far proved, and we have no doubt they will continue to prove, excellent dairy cows in this country. But they do not, so far as we have been able to ascertain, maintain that high superiority as milkers that they do in their native land, and the reasons for the fact are obvious. The climate of Ayrshire is moist and mild. It has neither our heats, nor colds, our floods, nor drouths. Its pastures are green and succulent throughout the Summer, while ours are frequently parched and bare. Twenty years ago we visited a beautiful herd of Ayrshire cows in the neighborhood of Boston, belonging to a gentleman who had imported them without regard to cost, giving his order to his agent abroad for "the best milkers to be obtained." Most of them were "prize" cows in Scotland, and certificates came out with them stating their yields of milk to have been from twenty-four to thirty-three quarts a day. In answer to our inquiries as to how they yielded here in comparison to what they did in Scotland, we were told by their manager, that it was about two-thirds the amount stated in the foreign certificates, namely: eighteen, to twenty-two quarts a day, under the same circumstances as to time from calving. They were imported some two years previously. Yet that was doing well, and satisfactory to their owner, who wanted *certainty* in the milking propensity of his cows, rather than the hap-hazard results attaching to the progeny of the "native" stock, in which he had often, by the miscellaneous manner of their breeding, been disappointed.

Thus, then, on sound physiological principles, the milking quality having, by a long course of years, been deeply bred into the cow until it has become an inherent part of her nature, the Ayrshire is valuable as a dairy beast, and may remain among us as a distinct variety, always reliable in that department of husbandry.

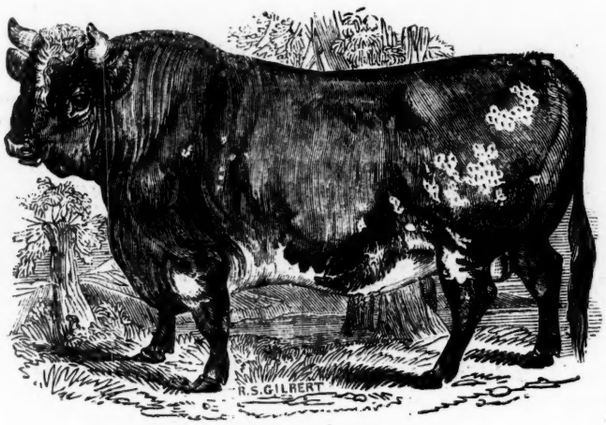
AS A WORKING OX, AND A BEEF MAKING ANIMAL

we have nothing to say. In relation to working we see no particular merit in him; rather the contrary; and as to beef, since they are a kindly feeding race, we presume that when required for the shambles, the Ayrshire will lay on flesh rapidly, and show a satisfactory carcase, cutting up well on the block.

Swelled Udder in Cows.

In addition to what has been already published, we have several letters on this subject. M. D. Adams, of Warren, Trumbull Co., Ohio, writes us: "I had a fine cow four years old, that wandered off to drop her calf, and it was some time before she could be found. She lost her calf, and, as there was excellent pasturage at the time, when she returned her udder was much swollen and very feverish. I could get no milk from her and feared I never should. But, as an experiment, I made a strong solution of saltpetre in water, and washed the bag every two hours through the day. Before sundown the swelling and fever abated, and I drew a pailful of milk, and in 24 hours both swelling and fever had entirely left her. She afterwards did as well as any cow in my herd....Since that time I have seen the same application in many similar cases, with like favorable results, and I believe the above to be one of the best remedies I have ever known used for the complaint. I have also found it useful for various swellings and inflammations, not only on dumb beasts but on human flesh."

Remark—As is the case in most remedies and prescriptions, as well as in a majority of descriptions of modes of culture sent to us, the above is defective because certain *particulars* are omitted. Was the solution used hot, warm, or cold. It is important to know *how much* saltpetre was used to a given quantity of water. Does a "strong solution" imply 2 ounces or 2 pounds to a gallon of water? It may be questioned whether it was not the bathing and rubbing that reduced the swelling, rather than the addition of the saltpetre; or, if this addition be necessary, would not common salt be equally good. We make these remarks as suggestions merely—not to find fault with Mr. Adams' communication for which we



AYRSHIRE BULL.

are thankful. Our aim is to gather up from the entire country, just such information in all departments of rural labor.—Ed.]

Docking Cattle.

Docking horses is bad enough, but docking cattle is worse. The appearance of a horse is sometimes improved, *perhaps*, by "setting up" his tail and shortening it: the operation also prevents him from getting his tail over the driver's lines. But these arguments have no pertinence in the case of neat cattle. We believe, moreover, that the practice is injurious to the health and comfort of these animals.

The advocates of docking maintain that cattle need blood-letting every Spring. They say that the end of the tail becomes soft, and in connection with this, the joints of the legs swell and become weak and tremulous, and that the only remedy is a cutting off of the tail. Why do not these doctors inquire whether this Spring sickness is not, more likely, owing to the season, to the change from the dry fodder of the barn to the succulent food of the pasture, and the change from the warm stable and barn-yard to the chilly ground of the open pasture? Cut off a cow's tail, to cure the Spring sickness! Why not as well cut off a man's leg to cure his chilblains? The practice is nonsensical and barbarous. It is cruel, not only because it is painful, and occasions a loss of blood, but because it robs the animal of his chief weapon of defense against annoying insects in Summer. We half suspect that one reason why "hired men" are so fond of doctoring cows in this way, is that this treatment saves them from many a brush of the tail during milking-time.

A writer in one of our foreign exchanges speaks of this docking-mania as prevalent in England, and as mixed up with more superstition than here. He says that many farmers believe that the Spring sickness of cattle begins in the tail, and passes along that to the cow's back, and "that it is on account of something wrong in the tail that she loses the use of her legs; and then some set to work and cut the cow's tail off; while others less cruel or more scientific, make an incision into the under surface, and allow the wound to bleed freely, and then fill it up with a mixture of tar and salt, and I know not what." He then goes on to say that in some districts, farmers think there is witchcraft in the business, and practice "charms," as well as docking. They bind a twig of the rowan tree on the end of the cow's tail, and compel a black cat to pass three times around the cow, and over her back and under her belly, which so enrages pussy that she mews and scratches with great fury until she breaks away from the necromancers and runs off with flying tail, convincing all beholders that surely the devil has got into the cat!

The writer next proceeds to give a careful analysis of the different parts of the tail of cattle, and shows that what is considered by some a diseased condition of this member, is only a wise provision of nature to prepare the tail for brushing off flies during the Summer. The tail is a scientific whip. "The column of bones within it forms the shaft or handle of the whip—the soft part, the connection between the handle and the thong, while the thickened extremity may be easily recognised to represent the thong, and the hairs to form the lash or point; so that we have a whip to drive away the flies, and so complete a one that the coachman may borrow a lesson from its construction."

From considerations like these, it is plain that the practice of docking cattle is a cruel one, and not worthy of adoption by sensible men. The tail may, indeed, become diseased, in connection with other parts of the body, but it is not the *origin* of the disease; and amputation of it is not a rational treatment of the difficulty. There are remedies, simpler and better.

Weaning Calves.

This, and the next month are the usual seasons for weaning calves from their dams when they have been so far reared at the teat, or for cutting them altogether off from their milk diet—say at the age of four months. We presume they have had plenty of grass and water meantime, both of which they partake freely. But they sadly miss their accustomed milk diet when deprived of it, and to insure their continued growth, a substitute must be given in the shape of corn, oat, or oil meal. The three mixed in about equal quantities are best given at the rate of a pint of the mixture each morning and evening—a quart a day. It may be laid dry, in a capacious trough, and with a slight sprinkling of salt on it, they will soon eat and love it. The pasture should still be fresh and sweet, and after a month of the meal diet it may be gradually discontinued.

Calves, about weaning time, are apt to get lousy, if not in high condition. Look to this, and if any be found, apply the remedies we published page 279 of last volume, which will prove effectual. That is: rub on the lousy places, a little *soft* grease mixed with a sprinkling of common Scotch snuff, which will cause the lice to leave at once. If you have not the snuff, the grease alone will do. The lice take up their abode on poor animals where there is not an abundance of natural oil exuded.

As the season progresses, feed them green corn-stalks, finely cut up if necessary. Pumpkins, when ripe, are capital food for calves; green turnips, beet, and carrot tops, or any other green food they will eat. And so they should progress till ready to go into Winter quarters. A good three-year-old calf which has grown right along from the time of its birth without check or hindrance, will be worth two poor, stunted things. One comes out a fine cow, bull or bullock, while the others are pinched, deformed by poverty, and unsatisfactory altogether.

We have raised hundreds of calves, and in all sorts of ways. A third less *pure milk* drawn from the teat by the calf, is quite as good as the full quantity milked by hand, and then fed the calf. We know this by trial. Sucking is the natural way—feeding is not. But in feeding, skimmed milk and other food may be added, answering good purposes, and rearing the calf at less expense.

Weaning Lambs.

At four months old, lambs ought to be thrifty, vigorous, and in good condition, if their dams have had good pasturage since yeaning; and about this time, or soon after, according to the time they were dropped, they should be weaned. To effect this in the best way, shut up the flock—ewes and lambs—in a close yard or stable; catch the lambs carefully, and separate them from the ewes. Then, after the ewes are driven away, put the lambs into a well fenced field, with plenty of fresh grass (a rowen lot is best) out of sight and hearing of their dams; for if they can get near them there will be continually bleating on both sides, and days will intervene before either lamb or ewe will get quiet and go to feeding. Besides their discontent, they will lose flesh, which it will be hard to recover.

If the lambs be still intended for the butcher, they should have meal or other fattening food, till taken away altogether. If to be reared, grass is sufficient for them—only have enough of it, with plenty of water, and an occasional lick of salt. After a fortnight, or three weeks if necessary, they may be turned with the ewes, but it is better that they be not mixed at all until the next Spring, as they require more nutritious food, and closer attention.

Lambs, if not attended to at shearing time, are apt to get ticky. If so when weaned they should be immersed up to the eyes in a strong decoction of tobacco water. Tobacco stems, steeped, are as good as the leaf itself. Have the decoction in a tub, and each lamb put in by itself, and the liquid well squeezed into and out of the wool, as taken out. This will kill every insect in it effectually. Such is *our* method.

A young gentleman who has just married a little beauty, says "she would have been taller, but she is made of such precious materials that Nature couldn't afford it."

Too many persons are far less ashamed of having done wrong than of being found out. Are you one of them?

Hay Making.

This is a subject often talked and read about—tolerably understood by many farmers, but practiced less well, in general, than understood. There are several different modes of hay-making as well as different opinions about the proper time in its growth to cut grass. They can not all be right, of course; and as the *exactly* proper time can not be hit by any farmer who has a large hay crop to secure, he must make the best *average* time that he can, trusting weather, and other casualties as they may occur. Timothy is the great hay grass of the United States. Orchard-grass, red-top, blue-grass, and the red and white clovers furnish the balance chiefly, excepting some of the wild, or indigenous grasses local to peculiar soils and climates.

Long experience, we believe, has settled the fact that pretty much all grasses are most nutritious in hay when cut at the point of time that the blossom is passing off, and the seeds fully charged with pulp. The stalk, leaf, and head are then full of matured sap, and possess the greatest amount of nutriment. Such, indeed, is our own experience, after many years' practice in both cutting, curing, and feeding hay; and as timothy is the bulk of our Northern hay crop, we take that as a rule to govern other grasses in their cutting.

We consider then, the grass as exactly right for cutting when going from the "blue," into the "white" stage of blossom, and introduce the scythe, or machine as we are supplied with them. A mowing machine is best, of course, where a smooth bottom is found, and it should not go into the field until the dew is off the grass in the morning. If cut then, it rapidly dries and is usually fit to go into windrows, or cocks in the afternoon. We believe decidedly in curing hay in the windrow, or cock, according to its condition. If possible, hay should never lie in the swath over night. Better let it stand in the cock three days, than lie in swath with one dew upon it. Hay, even damp and green, thrown lightly into cocks will cure sweet and well; while in the swath, or spread until quite dry, it loses half its freshness, and more than half its sweetness to the taste, or smell. It should go into the barn, even, not perfectly dry. Discretion is to be used in this, but a farmer who has once made his hay right need never be at a loss about the proper condition to house it. After many seasons of trial, we always prefer to store our hay when it has a slightly damp feeling to the hand. Hay will cure in the mow, or stack, as well as in the cock, or swath, and if not stored positively green, comes out fresh, and aromatic.

Yet, as all can not wait until the very moment arrives when grass *should* be cut, some must be commenced *too early* to avoid a part of it being *too late*. Timothy seed should never shell in the field, if possible to prevent it, although ripened grass will cure in a few hours after cutting, and may be taken directly to the barn afterwards, in clear, dry weather. It also depends somewhat on what kind of stock are to eat the hay we cut. Calves, young cattle, milch-cows and sheep, like early cut hay best, and no doubt it is best for them—they eat it clean; while horses, working oxen, and young bullocks like it equally well if matured so that most of the seed is ripe enough in the course of cutting, to grow.

In fields of mixed grasses, as where timothy, red-clover, white clover, red-top, and blue grass grow together, the prevailing grasses in them should govern the time of cutting. The earliest of all is the blue, or June grass—good when in blow, but worth much less when gone to seed. The clovers should be going into their brown heads, while the leaves and stalks are yet fresh and succulent. Timothy follows the clovers about a week, while the red-top is latest of all, and remaining long in bloom, may be in season a fortnight or three weeks after timothy.

Early cutting in the morning is only necessary for scythe mowing; and that only to save time, and labor. Grass cuts easiest when damp with dew or rain. It takes it several hours longer to dry, when cut in the dew than when dry, and for this only, if for no other purpose, the machine is preferable. The great object with the farmer should be, to get his hay housed as soon after cutting as its condition will permit.

Mode of Curing and Time of Cutting Clover and Other Hay.

To the Editor of the American Agriculturist:

The value of the grass-crop, and the importance of curing and preserving it in the best possible manner, will justify my offering a line upon the subject. There is a variety of opinion as to the best mode of curing hay. Some persons following, to the letter, the old adage, of "making hay while the sun shines," seem to think it can be made at no other time, and that the more the sun shines upon it the better. But is this really so? In storing up hay for our domestic animals in Winter, do we want to save merely the dry fibers of the plant? If so, we might as well wait until the grass and clover are fully ripe, before cutting them, and the more we dry them the better. The fact is, however, that we wish to save as much of the natural juices of these plants as possible. When the gatherer of herbs is seeking for plants to fill his medicine chest, he cuts them just as they are fairly bursting into flower. At this stage of their growth they have their most useful qualities in perfection. If, however, they are dried in the sun, or get soaked and bleached in the rain, they lose many of their valuable properties. Dried in the shade, they retain nearly all their nourishing and healthful juices. Now, let us apply this principle to the cutting and curing of hay. If cutting is delayed too long, the stalks and leaves become hard, wiry and tasteless. Such hay must be not only less pleasant to the animal's taste, but also less nourishing than if cut at its early maturity. With most of the plants used for hay, just the right period for gathering, is when they have fairly unfolded their flowers. Then, there is a large flow of rich, sweet juices in the stalk and leaves, and if the hay is properly cured, most of these properties can be saved.

Clover hay, especially, should not be allowed to become too mature before gathering it. Its principal value lies in its blossoms and leaves, and these should be saved in their best condition. The New-England Farmer expresses my views so perfectly, that I will use his words in preference to my own: "By cutting this grass (clover) when the crop is in full blossom, allowing it to remain in the swarth the first day after mowing, till nearly night, and then turning it carefully with a fork so as to expose a fresh and unwilted surface to the night dews, and cocking it in the afternoon of the second day, in small, compact cocks, of about eighty pounds unmade hay to the cocks, it will make evenly and thoroughly, and may be pitched and even trodden down in the mow without being deprived of its heads or finer leaves. The color will be a most beautiful green, and the flowers as fresh in color as when cut. After cocking, let the weather be fair or foul, no opening or turning of the 'grass cocks' should be allowed, unless in case of a protracted storm. It is unnecessary, as the hay will cure completely through, and the outside, when saturated with water, will soon dry off, and effect no harm whatever to the hay."

I will here add, that if at any time the farmer is obliged to get in hay imperfectly cured, he may save it from material injury by throwing it upon an open scaffold, or storing it in several places, or mixing with it a few layers of old hay or straw, which will act as ventilators, and absorb the excess of moisture. Cattle will eat those layers with great avidity, because they have taken up fresh odors and juices from the new hay. A good ventilation of moist hay may be secured, also, by making a chimney in the center of the mow, of bundles of straw set on end, one on the top of the other. NORTHERN NEW-YORK.

For the American Agriculturist.

Origin of the Horse Rake.

"Sam, I want you to rake all the hay up today. I am going away, and will not be back before night," said farmer Kissam, near fifty years ago. "Yes massa, we have 'um all up right, and no mistake."

Sam and his sable companions took their rakes and proceeded to the hay-field in good earnest; but the sun rose higher and shone hotter and hotter, until they essayed just to stop a bit under the inviting shade of an apple tree. Here they beguiled the time away so pleasantly, listening to Sam's marvellous stories, that, before they were aware, the horn sounded for dinner—and the hay not half raked. Here was a dilemma! If master should come home and find the hay not raked, a settlement would be the consequence. What was to be done?

"I tell you what, Jack, I think we can make a big rake like our hand rakes, and hitch de sorrel to it, and make him help us. Massa has one straight stick, and I will bore him full of holes, and you saw some pins about two feet long and put in dese holes, and I will put a strong stick in de middle to hold him by. Tom, get old sorrel, and tie his traces to de end of de stick with a rope, and we'll have de hay up yet afore night."

And, sure enough, they did get up a hay-rake, and scratched the hay together in a hurry. When the boss came home he noticed a singular looking contrivance in the lot, and, on examining it, he saw at once they had introduced a new idea; and, calling in the aid of a carpenter, he constructed the *first* horse rake in the United States—so the story goes. Said horse rake was made in the town of Jamaica, Long Island, and lazy negroes were the inventors. S.

Hempstead, L. I., June, 1858.

Mixture of Grass Seeds.

We question whether sufficient attention has been paid to this subject in our country. In England, and on the Continent, farmers mix several kinds of seed together, when laying down their lands to grass, because some sorts grow better than others in different seasons, and as such a mixture furnishes a succession of fresh herbage in different parts of the same year. We have seen the following mixture tried, and are prepared to recommend it: Ten pounds of red clover, five pounds of white clover, one peck of herds-grass, and half a bushel of red-top. Let this be salted down with two bushels of plaster.

Let not your tongue cut your throat.

Prolific Clover.

We recently counted seventy-six stalks springing from a single root of the common red clover. It grew upon a reclaimed muck swamp and was very rank. One can see from this instance the enormous productiveness of a single seed of this plant, and its great advantage as a green crop for turning in to ameliorate the condition of the soil. Every one of the myriad leaves draws carbon from the air, and furnishes it to the soil in its most available form. Clover with plaster is an indispensable crop in the rotation adopted by many of the Pennsylvania farmers. It precedes the wheat crop, and secures that fine tilth, which is found to be so important in the cultivation of that cereal.

The roots of the clover plant are much larger than those of the common grasses and extend deeper into the subsoil. The decay of these roots, leaving vacant spaces for the passage of air and water, must have a considerable influence upon the mechanical condition of the soil. As a forage crop, clover is undervalued. The yield is not only very large, but the quality, as tested by experiment, stands among the best.

Hay Caps Again.

If all our older readers kept the last volume, and we had not many thousand new ones to look out for, we would simply say: read last year's suggestions. The fact is, we *know* these hay caps are among the most useful and economical implements for all hay-makers on a small or large scale; and we are also aware that not over one farmer in a hundred has yet tried them, and until they do we shall keep at the subject, giving line upon line, precept upon precept, here a little and there—a good deal.

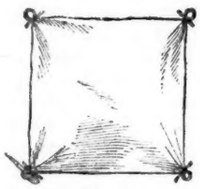


Fig. 1.

By a HAY CAP, we mean a simple square pieces of unbleached, unprepared cotton cloth, with a cord sewed upon each corner and tied to a wooden pin. Our engraving fig. 1, show one of these caps spread out, and fig. 2, one of the pins—*rather* magnified.

Fig. 2.

To make them, get a piece of cheap, coarse, unbleached cotton, the more closely woven the better. That 2 yards wide is best, though 1½ or 1¼ yards wide will do, if a wider kind is not at hand. Cut or tear this into *square* pieces. The torn edges may be hemmed or not, as they will unravel very little. If there is abundant time, it is better to hem them. Fasten a strong small cord upon each of the four corners, and to this tie a wooden pin about a foot long, say one inch in diameter at the blunt end and sharpened to a point at the other. These pins may be rough or whittled smooth. They may be cut from twigs or from branches of trees; or they may be split from a straight grained inch board sawn into lengths of one foot. A single notch in the blunt end will hold the cord from slipping off. You can cut the cloth, make the pins, tie them on, and complete ten or a dozen caps in an hour. All painting or varnishing preparations upon the cloth are worse than useless. The plain cloth will shed rain as well as a cotton umbrella, while any substance put on to make it water tight will prevent the escape of the moisture from the damp grass, which of course is not desirable.

The engraving, fig. 3, shows how to use the caps. In the cut, however, the hay-cock is represented too flat; in practice it should be more pointed in the center, in order to shed off rain well. Cut down the hay; let it wilt a little; pitch it into cocks, and throw a cap over each, fastening down the four corners with the wooden pins attached to them. Your hay may then stand until it is cured, and afterwards until you are ready to take it in. Twenty or thirty, or more of these caps may be laid flat one upon the other; then two persons can take hold of the bottom one and thus carry them along. They drop the pile by the side of a hay-cock, seize the corner pins of the upper cap, spread it over the hay and pin it down; then take up the remaining caps and go

Fig. 3.

on to the next cock. Two active persons can in this way cover eight or ten tons of hay in a single hour, and as quickly remove and gather the caps.

Advantages.—Every one is familiar with the fact, that hay "cured in the cock" is greatly superior to that dried in the sun. By curing in this way there is far less waste of leaves and "scatterings," than when gathered into windrows *after* being dried. This is especially the case with clover. The *average* annual loss in haying, from damage by rains and dews, is much *greater* than is generally supposed. It is a low estimate to say that this loss is equal to one dollar per ton on all the hay cut in the country. Who can estimate the number of animals which are rendered unhealthy and often lost from eating musty damaged hay? Who that has carried hay to market does not know that bright, green colored, well cured hay will bring two to five dollars a ton more than the same hay in a dark colored, "banged," poorly cured condition. The feeding value of hay depends much upon the amount of sugar, starch and gum it contains, but in sun-drying much of these materials is changed to woody fiber. All of this is obviated by having a supply of cloth hay caps (umbrellas), so that you can not only dry it in cocks despite rains and dews, but also take your own time for doing it. Let us estimate

The cost and profit of Hay Caps.—At 14 cents a yard for the cloth, a cap 1½ yards square will cost 21 cents. The making can be done at odd spells, or on rainy days, and this trifling cost need not be reckoned. A dozen of them, costing $2.50, will cover a ton of hay. They may be used, on an average, at least three times each season. If carefully housed they will last ten years. This will be $2.50 for covers for 30 tons, or about 8 cents per ton. Allowing even 50 per cent for interest and storage, we have a cost of only 12 cents per ton, or a dollar for 8 tons. But we may even double, this last estimate and the cost would then be only *twenty-five cents a ton* for all the advantages to be derived from the use of the caps.

Other uses of the Caps.—The caps provided for hay may also be used for covering wheat and other grains standing in shooks in the field. It will pay to provide them for this purpose alone. We have heard of their being used over corn. When used for this purpose, they are of course subjected to longer exposure to weather, and will not last as many years, but even then they will *pay* we think.

Large Caps for Wagons.—Several persons have used, and recommend providing one or more large sheets to throw over loads of hay and grain in an emergency, and also over stacks necessarily left unfinished at night, or interrupted by showers. The plan is doubtless a good one.

We have received very numerous letters from subscribers, saying that even last Summer, which was a comparatively dry one, they found the caps to pay double their whole cost, in one season. Try a few of them this year, and if your experience is so different from that of others that you do not think they will pay, why the cloth will not be lost. Your wife will tell you that "cotton cloth never comes amiss, no matter what shape it is in."

A Plea for Moles.

To the Editor of the American Agriculturist:

Hogg, the Ettrick shepherd, observed that on lands tenanted by the mole, the foot-rot in sheep was much less prevalent than where they had been extirpated. An intelligent farmer in the south of England, writes: "From long and attentive observation I feel satisfied that no animal is more beneficial in its calling than the mole. The farmer, I think, ignorantly and wantonly destroys them. Were he to reflect a little, and make a few observations he would, in most cases, protect and not destroy them, as they are very interesting assistants to his labors. They destroy the wire-worm and all kinds of grubs, and so beneficial is this, that I have seen many fields of corn greatly injured, if not destroyed, by the moles not being permitted to work in them. I never allow them to be trapped. Year before last I had a field of wheat in which the moles were busily at work. I was anxious to preserve them, but, in my absence, a neighboring mole-catcher entrapped them. Exactly at the place from which they were removed, and for about an acre further into the field, the wire-worm entirely destroyed my wheat. I made it my business to examine many places in the neighborhood where traps were set. In one field I saw eight traps in an area of about an acre of wheat. I examined the place and found the worm at the root of almost all the plants. Several other fields were examined where traps were set in the same manner with results always the the same."

Some time ago I was passing with a friend over a field, and he observed that it would grow nothing on account of the wire-worm. I told him to get moles. "Why," said he, "we cannot keep them out of it; we destroy quantities of them every year!" I said, "don't destroy them." He took my advice, let the moles mind their own business, and since that time the field has borne excellent crops. This may be new to some of your readers.

A WHISTLER AT THE PLOW.

Fig. 7—HAWTHORN—(*Cratægus Oxycantha.*)

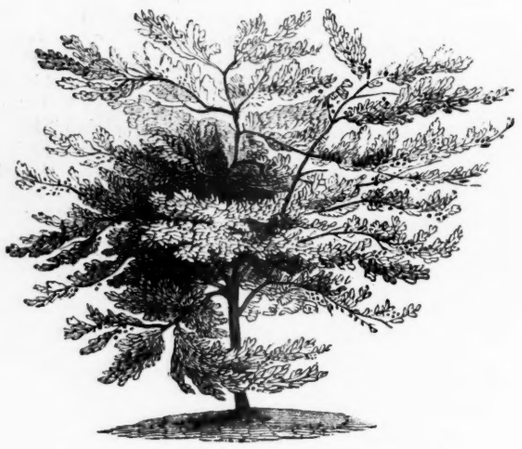


Fig. 11—COCKSPUR THORN (*Cratægus Crus-galli.*)

Hedge Plants..... II.

[*Continued from page* 177.]

In our last number we described and illustrated some of the most valuable hedge plants, and we continue here with a description of some which, though less vigorous and growing less rapidly, are, by many, considered as our best plants for hedging.

The HAWTHORN (*Cratægus oxycantha*), fig. 7, belongs to a genus of plants which in this country is just beginning to attract the attention it deserves. English poetry has long delighted to honor this plant, and it is there associated with all that is beautiful in rural life. It is the chief hedge plant of England, and is among the first plants that greet the rambler as he leaves the town after the Winter's confinement; and it is the first to notify the tardy farmer that the Spring is really upon him. At the time when it puts forth its profusion of delicate white flowers filling the air with sweet perfume, it is difficult to conceive a more beautiful sight than the hedge-environed fields and cottages of England.

The Cratægus affords many species (enumerated by some at over 100) and each year enthusiastic cultivators add to the number by hybridizing. Generally, the flowers (fig 9) are white, but some sorts are beautifully colored. By judiciously selecting the different varieties, a succession of bloom may be produced from early May to the 1st of August, and a pleasing effect may be obtained by grafting differently colored species on one hardy stock, such as the *oxycantha*, and trimming so as to produce a compact, pyramidal form. An elegant "bouquet" upon the Lawn, formed in this way, will not fail to attract great admiration. And as the ripe fruit (fig. 10) which is no less ornamental than the flower, continues upon the tree, in many kinds, until the following Spring, the tree never ceases to be an attractive object.

Fig. 8—LEAF OF HAWTHORN.

Loudon says: "If a man were to be exiled to an estate without a single tree or shrub on it, with permission to choose only one genus of ligneous plants to form all his plantations, shrubberies, orchards and flower gardens, where would he find a genus that would afford him so many resources as that of the Cratægus?"

Fig. 9.

Fig. 10.

FLOWER AND FRUIT OF HAWTHORN.

Although the Hawthorn has such universal adaptation to the purpose of hedging in England, and even some fine specimens of Hawthorn Hedges are to be found in this country, there are, in the United States, two important objections to its general use. It does not retain its foliage well in a season of severe drouth, and is liable to be attacked by the Apple tree Borer (*Saperda bivittata*). There is no method known by which the attack of the borer may be prevented economically, in a large number of trees; but, where there are only a few trees, a wash of whale oil soap—one pound of soap to one or two gallons of water—applied once a week during the month of June, to the trunk of the tree, will prevent the depositing of the eggs.

The seeds of all the Thorns are difficult to germinate, requiring more than a year to sprout. It is an excellent plan to gather the fruit as soon as ripe in October, mix with them twice their bulk of sand, and place them in a pit dug in dry soil, 18 inches deep. Allow them to remain there until the next Autumn, stirring them well several times during the Summer. They should then be sown, just before the time for frost, in drills one foot apart. The following Spring the young plants will appear above the ground.

COCKSPUR THORN (*Cratægus crus-galli.*)

This plant (fig. 11) is free from the first objection made to the Hawthorn, but is, in some localities, subject to injury from the same insect. It is a native of North America, growing from the Canadas to the Carolinas, is perfectly hardy, and really forms an excellent hedge. In England, where it has been introduced from this country, it is highly esteemed; and, in sheltered locations, it is evergreen, retaining its leaves and scarlet fruit throughout the Winter. This is also known by the name of the Newcastle Thorn.

THE BUCKTHORN (*Rhamnus catharticus.*)

This plant (see fig. 12) is a native of North America as well as of Europe, and is entirely hardy. Mr. Derby, of Salem, Mass., says of his Buckthorn Hedge, that it has not lost a plant in thirty-three years, nor has it been attacked by any insect.

It is a low-growing, irregular tree, about 15 feet in hight. The branches are armed with thorns; the leaves are smooth and of a bright green. The flowers are yellowish green, and are succeeded by bluish black berries. It is easily propagated by seed, and also by layers and cuttings. It has berries in abundance, which are much more easily managed than those of the Cratægus. The berries are gathered either in the Autumn or Spring, and the seeds washed out of the pulp by rubbing them in water upon a sieve. They are then dried and kept till wanted, or immediately sown in drills 18 inches apart, in a rich garden soil, covering them 1½ inches deep. The young plants will appear plentifully in the Spring, and should be kept free from weeds. When a year old they may be planted in the Hedge row, or, if desirable, they may be kept until the second year.

It will bear the severest climate of the United States, as it grows wild in Siberia. In all its situations it will withstand poverty of soil and

Fig. 12—BUCKTHORN (*Rhamnus Catharticus.*)

neglect in cultivation better than almost any other plant, and in its growth is more precocious than the Hawthorn.

With these plants, as with those described in our June number, it is of the greatest importance that strict attention be given to pruning when young. Be not too anxious to form a hedge in a short time. Cut back resolutely twice each season, gaining at each cutting only 4 to 10 inches, —and as the hedge approaches maturity, bring it into the pyramidal shape—never allowing it to assume a flat top, or perpendicular sides. The directions for culture, pruning, &c., were given in June, page 176.

Prune Fruit Trees in July.

SUNDRY HINTS ON THE MODE OF PRUNING.

We have already stated our preferences for July, as a pruning month for the orchard. The *farmer* is apt to object to this season, on account of other pressing work, while a few think it vandalism to remove branches loaded with unripe fruit. Many erroneously suppose that the wound caused by removing a limb or branch in the Spring will soonest heal over when the greatest flow of sap takes place. On the contrary, the sap escapes from the wound, and not only does the tree suffer from this loss of its vital fluid, but the same sap running down the side of the tree, becomes acidified, and acts as a poison upon the trunk. This we may frequently observe, by tracing the black, decayed bark, and wood even, in its track. The sap is not in a *wood-making state* until it has ascended the trunk, been changed and carbonized in the lungs (leaves) of the tree, and returned downward upon the outer surface, between the wood and bark, depositing a thin layer (cambium), which gives another ring or circle of wood to the growing tree.

During July, the sap is descending and forming new wood, which spreads itself over a smooth, even wound upon a tree, and the healing process at once takes place. Again, the dense foliage serves to protect the wood from sun-check, although we would advise a coating of shellac and alcohol, or grafting cement, where the removed branch is of so large a size as to require two or three years to heal over.

The orchardist, however, who plants his own trees, should never be obliged to remove such limbs; but with pruning knife in hand, he should go over his young orchard every Summer, and by a judicious cutting out of the small branches, obviate the necessity of afterwards removing large limbs. In doing this, he should constantly have in mind the idea of securing a well shaped tree of large size. The main thing is to keep a moderately open head, free from cross or interlocking branches, but do not remove the side spurs, which will have a tendency to cause the condemned growth, or form, illustrated on page 24 of the January *Agriculturist*.

In removing large or small limbs, cut close to the body of the tree, or larger branch, so that the new growth will have the shortest possible space to fill up, before entirely covering the wound. The practice of *hacking* off the branches of a tree with an ax, leaving a *stub* six inches or a foot in length, as a *ladder* by which to climb the tree, cannot be too strongly condemned. We have seen many such instances, where the new wood rolled up about them was more than sufficient to have entirely healed over the cut, but which showed, instead, cavities caused by the decay of the stump, sometimes large enough for squirrels to burrow in, and which every storm fills with water, thus hastening the decay of the tree.

Pruning Evergreens.

Evergreens used for edges or ornamental screens, generally need an annual shearing. Also, those planted as lawn-trees sometimes grow too luxuriantly, or awkwardly with the branches longer on one side than another. Or there may be gaps in the outline which require filling up. The pruning-knife may be used on evergreens, as well as on other trees, but it should be handled, in this case, less often, and more considerately. For shearing hedges and screens, a sharp sickle or hook is a good implement. For spruces and pines, the knife or pruning shears should be employed.

It has generally been supposed that the rampant growing pine could not, or should not be pruned. As a general rule, we think it had better be left alone; Nature has had long experience in shaping trees, and man can hardly improve upon her models. But whenever it is desired to keep the pine within certain limits, or when the tree-grower wishes to see into what fanciful forms he can mold the tree, he can accomplish his purpose by pruning. In the Spring, just before the buds start, cut off the end of the middle shoot of each limb, and the side shoots will push laterally, and convert the tree into a globe of bright green foliage. This result will not be fully accomplished in a single year, but the effect will be visible the first season. We do not, however, advise an indiscriminate pruning of evergreens; and, least of all do we favor the lopping off of the lower branches of these trees, as is sometimes ignorantly done.

The Orchard....VI.

THE PEACH.

Wherever this delicious fruit will grow, it is next in importance to the apple, as an orchard and market fruit. Its favorite localities lie in various districts of country, from Eastern Florida, westward to Louisiana, and thence northwardly to Iowa, and eastward along the southern borders of the Great Lakes, to the Atlantic, following a sort of isothermal line from its western known point of growth.

Intermediate, throughout all the States, they flourish, more or less, as soil, climate and local circumstances may govern. It is scarcely worth while to enumerate the most favorable districts for their growth, as peaches are so generally a favorite with all fruit lovers and orchardists, that they are attempted almost everywhere, and abandoned only in those places where they utterly refuse to thrive. Its *northerly* border within the United States may be limited to the south shore of Lake Ontario, west of Oswego, in New York. East of that point, in the same latitude, they rarely thrive, and with difficulty, north of the Catskills on the Hudson, or the northerly boundaries of Connecticut and Rhode Island. In large sections of the interior, where other fruits flourish abundantly, the peach refuses to thrive at all, its sensitiveness to Spring frosts, or other casualties cutting off its fruit. The seaboard, from Virginia to Long Island, is perhaps more prolific and *sure* in its growth than any other section of the United States, excepting the south shores of Lakes Ontario and Erie; the humidity of the atmosphere on these great bodies of water, and the absence of killing frosts protecting them in that comparatively high latitude, while much further south, on elevated grounds, or in depressed valleys, they refuse, excepting in few and far between situations, to thrive at all.

A hundred, fifty, forty, even as late as thirty years ago, the peach flourished in many sections of the country, when new and recently brought into cultivation, where they have since refused to bear fruit at all, or but seldom. The cause of this decline is, perhaps, not yet understood; yet, of the fact all are convinced; and no remedy for their recovery has, so far, been discovered; and the upshot of our experience may be recorded, that the peach is now a *local* fruit of diverse and scattered climates, soils, and altitudes; determined, not on any general rules or principles, but definitely ascertained only on a trial. We know localities, scarce ten miles apart, every way alike situated, except perhaps, a slight difference in soil, but on the same levels and streams. In one, the peach utterly refuses to grow and yield its fruit, while in the other it grows and bears in high perfection. A current of wind, a warmer exposure, hardly perceptible to human observation, may make the difference, so sensitive is the peach to subtle differences, in soil or atmosphere. It may, however be grown, in adverse localities, by aid of

ARTIFICIAL EXPOSURES AND PROTECTION.

Not under glass, as the grape, but in well protected inclosures, under walls or fences, and sheltered by them, or belts of growing wood In

such situations, if free from frosts in the blooming, and setting of the fruit season, with sufficient warmth of atmosphere, and a suitable soil, they may be raised, either for family supply or market. In such positions, they require extraordinary culture, pruning and training, which must all be taken into account for profitable production, and these determined, they can be produced at pleasure.

SOIL AND POSITION.

A naturally warm, quick, dry soil, with a porous, well-drained bottom, to take away all falling water, is indispensably necessary for the peach. It will not bear standing water, or a damp soil, and, therefore, land requiring under-drains is scarcely favorable to its growth, unless the drains be quite close together, as it often takes too much time for the falling rains and melting snows to escape, for the health and benefit of the tree. It does not matter so much what the composition of the soil may be, whether a stiff clay, or a light loam, or leechy gravel, if it possess the proper food of the plant. We have seen equally good peaches on all these soils, where the drainage was complete. *Very* rich land is not important. A secondary, or middling quality, sufficiently good for ordinary crops, is rich enough, and many soils, much too poor for these, frequently produce the peach in high perfection, like the hungry lands of New Jersey, scarce fit for anything else, where, although short-lived, it yields a profitable crop.

PLANTING.

The land should be prepared by a thorough, and deep plowing, to perfect mellowness; the holes dug sufficiently large, the roots well planted, and the young wood cut back, as directed in the books. If the intermediate land, not occupied by the trees, be required for root crops, or beans the first year, it may be so cultivated, but afterwards no crop of any kind should interfere with them. The trees may be in rows, from fifteen to twenty feet apart, each way, and plowed between the rows two or three times during the Summer, and kept free of weeds, particularly near the trees. A bush, or shrub shape should be given to the trees, by letting them branch near the ground, both for convenience in picking the fruit, and pruning the wood, as is best done by annually shortening in the terminal branches to half the length of the previous year's growth. They are thus protected from injury by high winds, and severe exposure to sun and cold, operating on their otherwise long and naked branches. Manures may be added, or not, as the nature or the condition of the soil may demand, and those manures may consist of ashes, lime, marl, compost, barn, or street manure, or artificial compounds, as may be most available. In thin, old, and worn soils the trees may last five to ten years, while in new or fertile grounds they will remain double, or treble those periods. We now know trees thirty years old, in constant bearing, and promising many years of vigorous life to come. The peach is a gross feeder, and rapidly exhausts the soil on which it stands; and when it finally fails, a few years of renovating culture with other crops should be adopted before the land be again devoted to their occupation

DISPOSITION OF THE FRUIT.

Where peaches will *net* half a dollar a bushel, or more, at the tree, or on the farm, an immediate sale of the crop is by far the most profitable; and at that price, where readily grown, they afford a large profit. If a market be not at hand, cutting and drying them as soon as they begin to ripen, is their best purpose. This is best done by cutting them into quarters, throwing out the stone, spreading them on wire screens, and placing them in drying houses, or ovens, warmed by fire heat, so as to cure them in twenty-four hours. A long flue, inclosed in a brick wall, and arch, with a door to enter it, and the screens laid on iron racks within, in tiers, is the best. When *thoroughly* dried, they may be either put into sacks or barrels, when they are ready for market. The price of choice dried peaches is always high, and the market can scarcely be overstocked with them. It is hardly necessary to say, that for drying, as well as for fresh eating, none but the choice kinds should be cultivated, as they are enough better, both in quality and price, to pay the small extra expense in their purchase, or the trouble of budding them. The common, late, sour, frost peaches are not worth cultivation.

For swine feeding, or distilling, perhaps, the peach can hardly be recommended as a paying crop, yet the surplus of very productive orchards are frequently devoted to these secondary purposes, so that none need be wasted. With the present facilities of railroads, and steamboat communication, together with the increasing disposition and ability of our population throughout the country to consume them, the peach culture, wherever they thrive successfully, may be almost indefinitely and advantageously extended.

VARIETIES.

Of these we have little to say, other than that those which are best adapted to the soil, climate, and market should be chosen. The peach is especially a warm weather fruit, and, therefore, the earliest are usually the most remunerative in price, according to quantity; while hardihood, steadiness in bearing, quantity and quality, all are to be considered in the bulk of the crop at large. The red, white and yellow rare-ripes, early York, and Crawford's early and late Melocoton, are, although scarce equal in flavor to some others, perhaps the most popular and profitable of all in the Northern markets. Those who propose going into peach culture, will soon get "the hang" of this branch of their pursuit; and with a well devised plan, and thorough attention to all the details, they can scarce fail in their object. Every man who has a garden where the peach will grow, should cultivate them for his own family use; for, as a tea-table luxury, a dish of pared, cut, and sugared peaches has no rival among the fruits.

Summer Fruits.

We are now getting into Midsummer, and its varieties of the smaller fruits, as currants, cherries, raspberries, blackberries, huckleberries, to say nothing of green apples and other tarts. Strawberries have already passed by, with their attendant luxuries of cream and sugar, leaving, as the only sorrowful memorial of their season, that it would not last forever! Since rhubarb has become so common and cheap in our gardens and markets, green currants, as the material for tarts, has been mostly superceded; and well that it is so, as rhubarb is much the better and more convenient article. Yet the currant, in *full ripeness*, as a tea-table dessert, for pies and puddings, is a valuable contribution to the table. In drinks, its expressed juice makes a delicious shrub, with the addition of sugar. The white is the most delicate for tea-table uses, or, mixed with the red, which adds piquancy to the flavor; both are delicious. To make them perfect in this disposition of them, they should be picked in the morning soon after breakfast, stemmed, washed clean, and drained. Then put them into the table dish, and sprinkle white powdered sugar freely over them, cover closely, and let them stand till the table is set. By that time the sugar will have dissolved, and percolated through them into a delicious treacle, and no Havana sweetmeat is comparable to this simple dish of sugared currants.

Currants will, in a good season, hang on the bush in perfection for a month or six weeks. They should be largely cultivated by every country family, as no fruit of the season is more convenient, economical, or healthy as an every-day table luxury. But, to be eaten with impunity, they should be fully ripe, which is readily indicated by their transparancy, and full, plump appearance.

The other Summer fruits we have named are used in pretty much the same way as currants. Cherries are ripe about the same time, and are equally nutricious and wholesome, either raw or cooked. Some people swallow the stone with the pulp. This is a bad practice. It passes the stomach undigested, obstructs the digestive glands, and we have known serious bowel diseases as the consequence. When cooked in pie or pudding they should always be stoned in advance, as well as for drying.

Raspberries are good—any way. The pulp is so soft that they need no preparation for the table other than sugar—sometimes not that. For tarts, pies and puddings they are delicious, and for a shrub in warm weather drinks, nothing can be more grateful to the palate, or to quench the thirst.

Blackberries are the only astringent Summer fruits of the berries, and, when well ripe, may be eaten with much advantage by both children and adults addicted to bowel complaints. They are simple, and nourishing to the system, grateful to the stomach, and sweet to the taste—well ripened, of course. For all edible uses they go with the raspberries, and where not abounding wild should be liberally cultivated.

The huckleberry, wherever grown, is so general a favorite that a recommendation of its virtues is scarcely needed. It is, perhaps, in its many varieties, the sweetest and best of all our berries. With bread and milk, what luxury so grateful to children, and what better for adults! Even while writing of them our memory gloats over our boyhood days of the huckleberry season! Every, any, all ways, the huckleberry is an unadulterated, unalloyed luxury.

Parents, indulge yourselves and your children all that you can in the *ripe*, choice, Summer fruits.

Mandrake or May Apple—Cultivation.

On page 154, May number, it was asked whether any one had tried cultivating the common Mandrake (*podophyllum peltatum*) to ascertain whether it would be thus improved in the size and quality of the fruit. W. Day, of Morristown, N. J., writes: "Some years ago I removed a few plants from the woods to my garden, where they grew and did well. They have had good garden culture ever since, but I cannot perceive that the cultivation is of any benefit to them. My father, an aged man of 84 years, was pleased with them, and they have been nourished on his account. The only advantage I could ever perceive was, that the fruit could be allowed to get *ripe*, while in the woods the boys could take them off *green*."

A bankrupt friend of ours was condoled with the other day for his embarrasment. "Oh, I am not embarrassed, at all," said he: "It is my creditors that are embarrassed."

Enemies of the Pear Tree.

We refer now, not to those who *write* against the pear tree—and we confess that our own occasional ill success in its cultivation tempts us to throw our quill at it now and then—but we allude to the unintelligent enemies which infest its bark and leaves and fruit. And, enough for this time if we speak only of the slimy slug which attacks the leaf. It pounces upon your trees all at once; suddenly, before you are aware, the leaves are riddled, the soft part of the leaf is eaten up, leaving only the net-work, resembling a piece of loose gauze. The slug is about a quarter of an inch long, dark brown, slimy, and shaped like a tadpole.

Every fruit grower should inspect his trees frequently during the months of June and July, and as soon as the slugs appear he should be armed and equipped to give them a warm welcome. Prepare a loose bag of coarse cotton cloth, put in two quarts of air-slacked lime or fresh ashes, fasten the bag to the end of a ten-foot pole, and in the morning, when the dew is on the leaves, raise the bag over the infested trees, and give the pole a few raps with a mallet, moving the bag about among the leaves until every slug gets his breakfast; they will want no dinner. Five minutes' work will answer for each tree. For dwarf pears and young standards, diluted whale oil soap applied with a broom, sprinkling-pot, or better, a hand-syringe with a sprinkler at the end, will answer an excellent purpose. As the depredations of the slug are confined almost wholly to the upper surface of the leaf, there is little need of the garden-syringe with upturned nose, except on trees beyond the reach of the watering-pot.

Ravages upon Trees by Mice.

Under the above head, a writer in the N. Y. *Observer* says: "Our vinery (a cold house) has suffered very much this Winter from their attacks, some of our best vines, two inches in diameter, having been cut clean off about four inches under the soil. Before laying down the vines I took precaution to guard against their attacks by wrapping sheets of tin around the lower part of the vines, as far down in the soil as the roots would allow, but all to no purpose, as they cut the main stem off below where the roots put out into the soil. I have tried every remedy I could think of to get rid of them, but to very little purpose. They will not touch poison in any shape, and they scarce ever come to the surface of the ground, so that we might catch them with traps. The drainage of our border affords them a secure retreat and nesting place, and consequently they are always on hand to trouble us, and our border being light and porous, they work through it with ease. Can anything be done or applied to keep them off, or could any composition be mixed with the soil close to the stems that would be offensive to them, or how can their ravages be prevented?"

This is a new case, but not at all surprising, after the havoc made among our own trees, and shrubbery, by the mice, during the Winter of 1855-6, where they did us injuries, both in number and extent, which can never be repaired. That Winter, we apprehend, has scarcely been equaled in the memory of man, for the extent of damage done to fruit trees by the field mouse; and no sooner had it been ascertained, and told of, than the agricultural and other presses, from the Bay of Fundy down to Opelousas, were running over with all sorts of specifics to prevent the mice aforesaid, or those which might come after them, from repeating the mischief. And not a single one of these nostrums, detailed with so much confidence, would be worth a copper to either prevent or repair the damages such as we saw and suffered.

We care not to repeat them here, for many of them have been repeated annually in almanacs, and receipt-books, and newspapers, ever since we were old enough to read, and in *given cases* may do well enough. But damages of such extraordinary kind as then occurred, no possible foresight or ingenuity could guard against. The mice girdled our trees six feet above the ground, where the snow-drift encircled them—even out on to the extremities of the limbs; and from the crutch of the trees down to six or eight inches below the surface, cutting off roots as large as our thumb, so that when the frost left the ground in the Spring, the trees fell out, sharpened at the ground end like a bean-pole shaped for sticking. Such extraordinary ravages as these may be set down with "fire, pestilence and famine," intended to root out and destroy, beyond the precaution of man, his long cherished labors and loves.

Treading down the snow, piling up earth round the roots, wrapping tin or sheet-lead about the trunks, may do very well in ordinary times, but in such extremities as we have witnessed, and as are above detailed, it is hard either to guess that they will again occur, or to devise a preventive. Where do the mice come from? In June, perhaps, you can scarcely find a field-mouse in the fields. In November they will be in thousands, and with a light, feathery, early snow, lasting all Winter, you will find myriads of them in the Spring, and almost every living thing, of grass, herbage, and trees, thoroughly cut up and girdled, when the ground becomes bare!

The damage having occured, how is it to be repaired, asks every one? Some, with more of theory than practice, recommend inserting young scions into the separated barks, above and below the girdling, thus tying the barks together, and so repairing the tree by a new connection of the sap vessels. Such a plan is indeed plausible, and has been now and then apparently successful, but it is of little account; for although it will connect the sap vessels together, and keep the tree alive, the denuded wood is perfectly dead, and in a few years will rot away, the young scions, although they may grow, will never unite side by side, to make a solid trunk; and in a few years more the tree will break off and die. Some trees, when the entire bark is not cut off, will still grow, and if only a thin film remain, so that the sap will circulate through, may finally recover. Such has been the case frequently, and by the application of various unguents, the tree has lived, while the parties applying them, not knowing that the film of bark was left, but supposing the girdling had been complete, notified the world that they had restored *completely* girdled trees by their applications! They were only mistaken as to the *fact*, in supposing that their applications had restored the bark, when in reality the *entire* bark had not been destroyed, and would have recovered without the application.

We never knew a completely dissevered bark restored—indeed, it is physically impossible that it can be. No *new bark* can grow from bare wood. The bark is as much a distinct organ of life as the leaf itself, and no other distinct part of the organization of the tree can supply its place.

We would gladly relieve the complainant above, in relation to his grape vines, but unless he exterminates the mice beforehand, or stops his drains, so that they no longer afford a retreat for the vermin, we not see that we can help him. In the case of all such destruction, when it is *known* to be fatal, our best advice is to root out the plants, be they what they may, and replant others in their place. A radical injury of that kind is scarcely ever to be recovered by tinkering.

The Failure of Young Fruit Trees.

The complaint is often made by farmers and other fruit-growers, that their trees do not succeed. They look well when first received from the nursery, but soon many of them begin to droop, some become stunted, and others die. The planter gets discouraged; he blames the nurseryman, or he thinks that his soil and exposure are unsuitable for trees, or he concludes that there is some mystery in fruit-raising which he cannot master; so that, on the whole, the business falls into bad repute with him. Happily, this is not the experience of all; but it is with not a few, and for them we now wish to say a few words

Dear unfortunates, how did you plant your trees? Perhaps the nurseryman was in haste when he took them up for you, and he cut the roots rather short. That was to be regretted, but did you try to mend the matter by shortening the tops a little, before planting, so as to restore the balance between the limbs and roots? And did you pare off the ends of the bruised roots with a sharp knife, so that they might heal over rapidly? The trees, as they grow in the nursery, had the advantage of an excellent soil. The cultivator was run often between the rows, and the hoe followed after, keeping the ground light and clean. Insects were not allowed to harbor in the bush or foliage, and the pruning knife, skillfully used, kept the trees in good habit of growth. Now, how has your treatment compared with this? You set some of your trees in tough, green sward, making a hole just large enough to crowd the roots in, throwing back the sod upon them, and ramming it down with the heel of your boot. "But we set some of them in plowed land, and they did only a little better." Yes, in plowed land, but without manuring the soil, and then you planted corn in the same field, so that the trees were soon overtopped and smothered by the corn. Your plowman, moreover, was careless in doing his work, for he allowed his horses to run over the trees, and his whiffle-trees to bark them. You should, also, have tied up your trees, the first year, to stakes with withes of straw, to prevent their being blown about by the winds.

It should never be forgotten that trees, like animals, need good food and care, in order to prosper. Remove well-fed stock from the barn and compel them to pick up their living by the road-side, and they will show the change in their condition at once. So with trees. Take them from the well-tilled nursery and set them in sterile soil, in naked fields, exposed to bitter winds, and where their trunks will be barked and their limbs broken by horses and cattle, and where they will receive little or no cultivation, it is no wonder that they should often fail. We had almost said they *ought* to fail; the farmer does not deserve to succeed if he takes so little care of his trees.

Now, to conclude our exhortation, we counsel unsuccessful planters to read the papers and books which treat of tree culture, and to visit their neighbors whose fruit orchards prosper. Ask these men the secret of their success. Undoubtedly, you will find that there is no great mystery about it, and that all your trees need is a little more skill and care on the part of their owner.

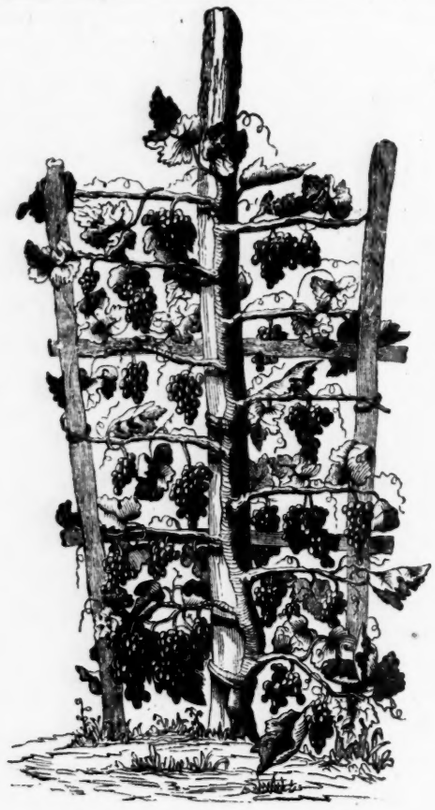


Fig 1.

Training the Grape.

We shall not now go into a lengthy discussion of the culture or training of the grape. An elaborate series on these topics extended through the entire volume of last year, and this subject will receive future attention. We now propose to show a few of the most approved methods of training the vine to induce *fruitfulness*, and at the same time keep it within convenient reach.

The novice at grape growing, looking upon the lengthy vine in its *wild* state striving to overtop the tallest forest trees, is too much inclined to allow it the "largest liberty," and he almost scrupulously avoids cutting back. Not so with the experienced and successful vine grower, whose aim is to secure fruit rather than wood.

The engraving, fig. 1, shows a method of low training, so as evenly to distribute the bunches and render the management easy and convenient. This vine occupies a space of only four feet high and three feet wide, and according to a correspondent of the Horticulturist, it ripened sixty-seven bunches of fruit in a season. If allowed to extend to about six feet in hight and four feet in width it would give a good sized vine, capable of producing a large number of bunches. Three stakes, about two feet distant from each other, may be used singly as in the figure, or it may be a continuous trellis. For vineyard culture we would run the rows north and south, eight feet apart, setting the vines six feet distant in the row, training to a trellis of this kind six feet in hight. They can be worked in one direction by the cultivator or harrow, assisted by the hand-hoe. Another method, and one quite extensively practiced in field culture, is training to a single stake. In this mode the vines are planted from six to eight feet apart each way, and the cultivator or harrow used to work the ground both ways, leaving but little for hand-hoes. Two vines —one of the present and one of the past year's growth—are usually trained to a stake some seven feet in hight. After bearing, the older shoot is cut out in the Fall, leaving the new one for bearing the next year. A new shoot is trained up and the old one, cut away each season, keeping the wood young and healthy.

Fig. 2.

In our cut opposite, (fig. 2,) the vine is permitted to branch near the root, and each division has its bearing and new shoot, the former making a sort of circle, slightly compressing the sap vessels and throwing the fluids into the fruit bunches upon the sides. After cutting them away in the Fall the upright ones are curved in the same way, and two new shoots are trained up. Thus each vine has two bearing branches at all times.

Still another plan in the renewal system is seen at figure 3 below, which we re-introduce for illustration.

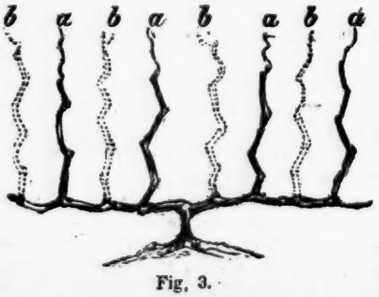


Fig. 3.

The vine is allowed to branch as before and trained permanently to the bottom slat or wire of the trellis. From these horizontals, perpendicular shoots are allowed to grow, at first two feet apart, to form the bearing branches, *a, a, a*. While these are producing a crop, new shoots, shown by the dotted lines, *b, b, b*, are allowed to grow mid-way between them which in turn produce a crop and are cut away.

In training over an arbor, the first or third modes may be adopted, but the side branches should not be allowed to ramble at pleasure, as is too frequently the case, completely matting the whole upper surface.

Lead Wire for Tying Vines, &c.

This is new to us, and it strikes us as being decidedly useful. It is very readily bent to any desired shape, and easily tied with the fingers; and, being unelastic, it remains in whatever position it is placed. When put around a vine or branch, it yields to any irregularities of the surface, and will not cut into the bark like the more inflexible copper or iron wire. Another important thing is its *cheapness*. We bought a small quantity of No. 16 at 20 cents a pound, retail; the price by the large quantity is much less. The retail price of the same No. of copper wire, is about 60 cents per pound. Our No. 16 measures 40 feet to the pound—a much smaller size would answer for most purposes. We are not aware who manufactures this lead wire, but it is for sale at the agricultural warehouses and stores in this city, and we presume it will soon be on sale generally.

Rise and Fall of Sap.

The commonly received theory of the ascent and descent of sap in trees and plants, is now and then combated with earnestness, and with some show of learning. We are told that there is no evidence of the rise of sap to the leaves, of its elaboration there, and its descent to form new wood, bark, leaves and roots. The sap, it is asserted, goes directly from the root to the part needing it, and there, in the cells of the plant, is assimilated and made a part of the growing structure. In proof of this, we are told, first, that the *presumption* is against the long and indirect process involved in the rise and fall of the sap; it is absurd to suppose that the juices of a tree travel up a certain set of pipes, often a hundred feet long, into the air, in order to be manufactured into woody substance, and then travel down, perhaps the same distance, in order to feed a branch near the ground. It is more consistent to suppose that Nature takes the shortest road to accomplish her ends. Then, we are referred to the following experiment of a French chemist, as a settler: A blood beet was grafted upon a white one, and each part, in growing, retained its respective color. "Now," says Parlezvous, "if the sap descended from the leaves of the blood beet into the fleshy part of the white, the latter would have been colored, and the red would have overgrown the white". And Brother Jonathon adds: "If the sap is elaborated in the leaves and descends, why does not the wood of a graft grow over the wood of the stock below it?"

But without dwelling longer on the aspects of the new system, we will briefly state the current doctrine of vegetable growth, and then leave our readers to judge between them. We shall have accomplished a useful purpose if we excite our youthful readers to habits of observation. It will

appear, also, before we finish, that the subject has some practical bearings.

During the warm days of Winter and early Spring, the spongioles (minute absorbing tubes) of the root gather up the crude sap. During frosty weather there is only a little circulation in the tree; but as soon as Spring opens, the sap, with which the roots and lower part of the trunk have become gorged, rapidly ascends through the cells of the new *wood* into the leaves. We do not presume to say precisely by what power it is caused to rise. Capillary attraction may account for it in part, but not wholly, and the principal called "*endosmose*" may share some of the honor; but, after all our speculations and large words, the mystery is left unexplained. The plant has no propelling engine, like the heart of an animal, to force its fluids to the extremities of the system. The sap runs up hill in spite of the laws of gravitation. Yet it does not rise in a dead tree, though that tree may have all its cells as perfect as a living one. This principle is wholly beyond our explanation. The exercise of Divine power alone can account for it.

The sap having reached the leaves, its water is exhaled, oxygen is given off, and carbon and hydrogen are retained to furnish food for the growing plant. The leaves absorb carbonic acid from the air. The sap being properly elaborated, now begins its descent through the *inner* bark, and is deposited all along the tree in the form of new wood, buds, leaves, bark and roots. If we cut into a tree, at certain seasons, we find a mucilage between the inner bark and the sap-wood, which is supposed to be the elaborated sap descending to form the new growth of the tree. It deposits a new layer of *wood* on the outside of the last year's growth, and a new layer of *bark* within the previous one. Thus, concentric layers or rings are formed, by which the age of trees can be determined with more or less accuracy. When the leaves fall, in the Autumn, this process of circulation is materially arrested, and continues so until the return of another Spring.

Does not this theory account for all the important phenomena of vegetable growth? The *presumption* urged against it by the new theory is not very formidable. After seeing a corn-stalk grow eight feet in a single Summer, a child might say that nature could not be so slow and indirect in her movements as to take a century for growing an oak. The Frenchman probably thought his vegetable experiment could not be *beat*. But the difficulty in that case is no greater than is presented in every instance of a grafted tree. The descending sap of the graft does not deposit wood of its own sort on the stock itself, because the bark—whether of the graft or the stock—determines what shall be the individual character of the wood beneath it. Or the cells themselves may take up the descending sap and form new cells around them of their own character.

A similar law may explain the beet mystery. If we graft rings of the bark of various allied species, such as the pear, apple and quince upon different parts of the same trunk, we shall find, after a few years, that the pear bark has deposited pear wood, the quince bark quince wood, and so on. Such experiments go to show that the character of the wood depends on the bark which over-lays it. If we fasten a cord or wire around a growing branch, we shall find, in the course of a year, that the portion of the branch below the ligature makes but little increase in size, while that above enlarges rapidly. And why? Because the ligature compresses the outer bark so that the *descending* sap can not pass under it freely and make deposits of new wood below it. The branch will appear something like what is shown in the engraving. *A*, represents the point encircled by the ligature, the branch above being larger than that below it.

But without enlarging further on this topic, we find in the theory just stated, the *principle* on which several important operations in farming and gardening rest. It has been found by experience, that the old custom of topping corn just as it begins to glaze, is injurious to the crop. The loss in weight of the corn so managed is greater than the value of the stalks And why this injury? Because, as soon as the tops of the stalks are cut off, the ascent and descent of sap are stopped, and the ears get little or no further food.

Ignorant gardeners sometimes strip off the leaves from their grape vines, in order to expose the clusters to the sun and so to hasten their ripening. But this is always injurious, because the leaves are essential to elaborate the juices which go to mature and ripen the fruit.

Falling Fruits.

Already the apples, pears and plums are beginning to drop abundantly from the trees. If you examine these, you will discover not a single sound specimen among them. They have fallen, not by the winds, but, quite likely, prematurely from disease. Cut them open, and you find either eggs, or grubs already at work upon the substance of the fruit. Every one of these fruits is a pest-house, to be immediately destroyed. It is good work for the boys to pick them up, and throw them into the pigstye, where they will be devoured, or rot among the fermenting manures. We are persuaded that the destruction caused by the curculio, and by the grubs that prey upon the apples and pears, is caused, mainly, by the neglect of this simple precaution. The fallen fruit is suffered to lie upon the ground, and mature its progeny of insects. The next year they swarm in increasing numbers, and the farmer complains that there is something peculiar in his soil and climate; he cannot grow good fruit. The difficulty is in the man and not in his soil. Pick up the fallen fruit.

And this reminds us of an apple orchard we visited last season. The proprietor had been accustomed for years to turn in his store pigs, and to keep them through the season, until the apples were sufficiently mature for making cider. Not an apple escaped the pigs from July to September. The consequence of this policy was, that he had fair, handsome apples to sell, while his neighbors were complaining that their crop was nearly all perforated with worms. Shall the pigs have a chance at the fallen fruit?

What is the Matter with the Apple Trees?

To the Readers of the American Agriculturist:

Have you noticed their feeble growth and the falling of the young fruit in unusual quantities? Look at the bottom for the trouble. Remove the dirt from around the collar with a hoe and with your sharp pointed knife, examine for the borer. Very likely you will find the tree half girdled with this insect. Most orchards are ruined before their owners begin to suspect the cause. They presume that everything is right with the tree, because the top remains green; while the worm is doing his work under the bark. Nothing but vigilance—a careful examination of the collar of the tree twice a year—will secure it against the borer. If this was not done last month, let it be attended to now. It will be some satisfaction to see where the enemy has been, and to know where to expect him in the Autumn. We have frequently seen thrifty trees of eight or ten years' growth completely killed for want of ten minutes' work with a sharp knife and a bit of wire. Bore the borer or he will bore your trees. CONNECTICUT.

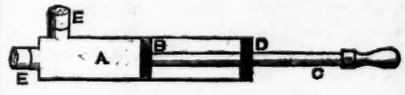
German Prune. (*Zwetschge.*)

According to the statement of Dr. Chas. Schaum in the Bauern Journal, it appears that there has been a mistake among the German population of this country with regard to the culture of their most cherished Fall fruit, the *zwetschge* (German Prune). They have labored under the supposition that this variety degenerated here into the common prune of the country. Opposed to this belief he cites the fact that Mr. Backhaus, a well-known farmer of Long Island, planted, some ten years ago, a quantity of the *zwetschge* trees which are now yielding the genuine fruit, or so scarcely removed from it as hardly to be perceived. F. Pfeifer of Indiana Co. Pa., and Mr. Tattler of Oneida Co., N. Y., corroborate the same, having raised the real German prune for a longer time.

A Cheap Double Garden Syringe.

To the Editor of the American Agriculturist.

I notice with pleasure, in your paper, illustrations of various new implements for the more convenient and practical operations in agriculture and horticulture. I have just finished, for myself, a little instrument to exterminate the lice and green worms on my rose bushes, and other shrubbery; and finding that it works so admirably, and is so cheap, I am induced to send a sketch of it



to the readers of the *Agriculturist*, if you think proper to have it engraved. *A*, is a tin tube, 12 inches long and 2 inches in diameter. *B*, the plunger, or piston, with a wooden handle, *C*. This head, *B*, is a short tin tube, a little smaller than the main barrel with a piece of circular tin upon each end and fitting the barrel, which leaves a place for winding on yarn, to make it water tight. *D*, is a thin *wooden* head-piece, fitted into the end of the tin barrel, with a hole in the centre of sufficient size to admit the piston rod, or handle.

E, E, are tin nozzles, one upon the end of the barrel, and one upon the side near the end, with two covers to slip snugly upon them. The covers are about the size of an ordinary tin pepper-box cover, one being perforated with a few holes, and the other a tight top, so that they can be shifted and the water thrown from the end or from the side at pleasure.

The object of the side nozzle is, that when held under the bushes the exterminating fluid may be thrown up on the under side of the leaves, which saturates them thoroughly, and, in falling, gives the other leaves a beautiful shower-bath.

The whale oil soap I presume is best, but as I cannot get it here I use the common soft soap.

B. B. CUSHING.

Frankfort, Me., June 1st, 1858.

Pride in a beauty is like a flaw in a diamond.

The Pea Weevil.

Not the least among the annoyances of the farmer and gardener, are the depredations of this insect. In Canada, Maine, Vermont, and New Hampshire, the weevil is but little troublesome; further south, it does great damage annually. It does not always destroy the germ of the pea into which it enters, but it weakens the growth of the young plants, renders the fruit unfit for culinary uses, both when green and dry, and diminishes its weight nearly one-half.

While the peas are very small, the beetle punctures the side of the tender pod, directly against the pea, and deposits an egg. A worm is soon hatched from this egg, and makes its way directly into the centre of the pea, on which it feeds. The larva grows with the growing pea, and usually attains its full size—about an eighth of an inch—when the pea has reached maturity and ripeness. Dr. Harris coolly observes that "few persons, while indulging in the luxury of green peas, are aware how many worms they unconsciously swallow." Perhaps, too, some find their way into modern coffee, roasted and ground. But we refrain from corrupting the public imagination any further! The larva lies in a partly dormant state until late in the Autumn or Winter, when it is transformed into a beetle, ready for the work of devastation, on the opening of Spring.

The only birds known to feed on this insect, are the crow blackbird, and the oriole, but they do not sensibly diminish its increase. It is important, therefore, that every man who sows peas, whether in the field or garden, should use his best endeavors to exterminate this pest. One method is to pour boiling water upon a lot of peas, and stir them smartly for a few minutes. This may destroy the life of a few of the seed, but not of many. A better way, perhaps, is to put a small quantity of peas into a colander, and set them over a kettle of boiling water. The colander should be covered loosely with a plate. The steam will then penetrate the mass of peas, and kill the insects without injuring the germ of the peas. This may be done in the Autumn, soon after the peas are gathered, the insect being then more easily dispatched than afterwards.

Lamp-black for Flowers and Grass.

To the Editor of the American Agriculturist.

Reading, some time since, that powdered charcoal applied to the roots of flowers was said to give intensity to their color—its virtue being attributed to the free supply of carbon—it occurred to me whether it might not be appropriated by the plant from lamp-black, more readily. I procured a quantity from a person using it, by wholesale, and liberally dusted my rose bush roots with it—dug it into the soil even. The result justified my expectations. The flowers were brighter than ever before, and the *grass* that grew near them of a *much darker green*. J. H. M.

Lancaster Co., Pa.

REMARK.—We have no doubt as to the result obtained, but question the theory of the article to which J. H. M. refers. Plants probably obtain the *carbon* entering into their composition, from the carbonic acid of the air which is absorbed through the leaves. Lamp-black is simply charcoal in a very finely divided condition, and, when put around the roots of plants, it acts both as a mulch, and as an absorber of ammonia. It therefore promotes the growth and vigor of the plant, and this, as a matter of course, increases the size and beauty of the flower.—ED.]

Not too Late to Plant Tomatoes.

Tomatoes seldom come amiss. Raw, or cooked, in the ripening season they furnish a good dish upon the table, daily, for weeks in succession. The surplus crop, saved so easily for fresh fruit in Winter, in cans, jars or bottles—or, as preserves, in figs and catsups—are doubly welcome in Winter, when "salt junk" is the too prevailing diet of the farmer. We speak of these things now, to remind our readers that it is not too late to set out tomato plants for a full late crop. If new plants are not to be got, a part of those set too thickly may be safely removed to a new place, by wetting the earth around them and taking up a large ball of it with the roots. There are vacant spots in the gardens or fields, or where early peas and cabbages are being harvested, which may be used for tomatoes or turnips instead of allowing the ground to lie idle for the remainder of the season. Among early potatoes soon to be dug, plant tomatoes, and if, perchance, you have ten or a dozen bushels more than are wanted for cooking and preserving in the various ways named, boil them in the hog-mess, or give them to milch cows.

Weeds in Gardens.

The only way to keep weeds in subjection is to treat them with "eternal vigilance." There is no royal road to a neat garden. On walking recently through a neighbor's grounds, noted for their good order and neatness, we asked him the secret of his success in exterminating weeds. He replied that he had only one leading rule on the subject, and that was, "*never to allow a weed to go to seed.*" If every person owning a garden will devote his leisure moments daily to the destruction of weeds, he will find it a comparatively easy matter to keep them down. And this systematic, daily hoeing will not only keep his garden neat, but will keep the soil in the best possible condition for the growth of his plants.

Bugs on Vines.

In addition to the remedies mentioned in our last, we now add, from a responsible source, that the ashes of anthracite coal are a good protection to plants against the striped and the black bug. A gentleman informs us that, after trying gypsum, soot and sulphur, in vain, he tried coal ashes, sifting on about half a pint to each hill of cucumbers, and the effect was at once apparent. Every bug disappeared and did not return. A remedy so simple and so cheap, ought to be known. Perhaps it will turn out, by and by, that nothing has been made in vain.

FLYING.—A fellow having imbibed rather freely took it into his head that he could fly, and to get a good position, ascended a sign post and started. He was questioned next day as to how he liked flying. "Oh!" said he, "it's nothing to fly, the lighting is the hardest part of the operation."

Good wives, like filberts, will remain good for a long time: but it depends upon the care you take of them, i. e., how you *husband* them.

Mr. Gunn, having been sent to Congress, did not make noise enough to gratify his constituents, and they elected Mr. Cannon, as his successor.

Not prosperity, but adversity is the true balance to weigh friends in.

IN DOOR WORK.

Food for Children—Important Hints on its Preparation.

Just now, our city is much agitated on the question of "swill milk," and, if we are to believe the statistic makers, in this city alone—to say nothing of the country at large—at least 50,000 children have been slain by this fell destroyer during the past eight or ten years. Every mother who has lost a child in times past, whether by her own carelessness or not, now very complacently charges the murder of her offspring upon the swill-milk venders. We would by no means give either aid or comfort to the venders of the villanous compounds sold under the name of *milk*, in this city and *elsewhere*, whether it be from the distilleries or chalk shops; but as bad and unfit for human diet as are these so called "milks," we verily believe that the untimely deaths among children, and grown up people too, would be diminished at least one-half, if the chief diet was only this milk—or if nothing *worse* were swallowed.

WHAT DOES KILL THE CHILDREN, THEN.?

We answer unhesitatingly that it is mainly unmasticated or unground *food*—To say nothing of mortality among grown people, we undertake to affirm, that, if food for children be invariably prepared according to the prescription we shall give further on, the deaths among them will be diminished two-thirds, the "pains under their aprons" will become very rare, and their wakeful restlessness at night will, in nine cases out of ten, be exchanged for sound repose.

When food goes into the stomach it must all be reduced to a fluid state, or at least to a pulpy mass, or it will lie there for a few hours, and then either be passed out by vomiting, or, as is usually the case, be thrown off into the intestines to make its way through the long channel, and be thrown out in the excrements. Now, if any one will take the trouble to examine the excrements of children, they will, in perhaps a majority of cases, find undigested lumps of food, such as pieces of potato, meat, fruit &c. But how is it possible that a piece of potato or fruit, for example, though no larger than a pea, can make its way through the whole length of the small intestines—a distance of 25 feet in a grown person, and 12 to 15 feet in small children—without producing irritation sufficient to disturb the health of the system! Yet how very few children get through a week without thus evacuating a score or a hundred such lumps of food!

People forget, or do not understand what process the food put into their own or their children's mouths, is to go through with. Just imagine all the food that goes down the neck at a meal, dropped into a bowl where it could be examined, instead of into the stomach. We should find it full of bits of meat, potato, pickle, turnip &c. &c. Pour into this a quantity of water or other fluid, and stir it for two or three hours, and we shall find a considerable quantity of lumpy food remaining undissolved. But suppose we take the same food and cut the meat into small bits no larger than a shot, mash up the potato to a powdered state, treat the pickles, fruit &c. in the same way, and then stir the whole together. In a few minutes they would become a pulpy mass.

Now this is just what takes place in the stomach, both of the child and the adult. This organ receives just whatever may be sent to it. It keeps up a constant motion so long as there is food remaining in it, but it is not supplied with an

upper and nether millstone, capable of reducing to a pulp the hard, lumpy materials thrown in. It works faithfully, grinding off the corners and wearing away the surfaces, but it has not the power to mash down many of the lumpy substances that are committted to it. The very attempt to do so produces irritation, and, after a time, it forces out the dissolved and undissolved material into the intestines; which, by their peristaltic (spiral or worm-like) motion, rub against the materials, forcing them along until they are finally discharged. Oftentimes, the stomach itself is so irritated with the substances that it can not work up, that it vomits them forth through the opening where they entered—and were this always done it would save much of the irritation in the intestines, resulting in griping pains, colics, bowel complaints &c.

So long as there are undissolved lumps of food, of any kind, in either the stomach or intestines, so long there must be irritation; and a continuance of this irritation must, in time, result in pain and ultimate disease.

Grown up persons may masticate or chew their food to a fine, easily dissolved mass, before swallowing it, but children will not do this, and as certainly as you place food before them in lumps, so certainly will they swallow, at least a portion of it, in this condition.

OUR OWN RULES FOR FEEDING CHILDREN

are these: They usually eat at breakfast and dinner the same food as older persons—meat, potatoes, and other vegetables, fruits, bread, butter, &c.—but *no article of food of any kind is to be placed before them which has not been previously reduced to so finely divided a condition that not a single portion can be swallowed larger than the smallest pea.* Meat is cut with a sharp knife to the smallest possible bits, and not left to be swallowed in pieces suitable for an internal poultice. Potatoes, however cooked or prepared, are not merely mashed under a knife blade, but they are ground down on the plate, almost as fine as flour. Fruit, whenever given, is scraped or mashed to a pulp. Raisins, and all kinds of dried fruit, and nuts, if given at all, are cut up as fine as shot. All kinds of vegetables—in short, whatever is to be eaten—is in like manner reduced to this fine state, unless it be bread, or something that will of itself dissolve readily in the fluids of the stomach.

The third or last meal of the day, is invariably "bread and milk," or "mush and milk," which are soon digested and out of the way, leaving them to sleep soundly and sweetly—if they are not allowed to overload the stomach.

This plan, which is so consonant with reason and sound theory, is productive of the happiest results in practice, and we can but earnestly commend it to all parents, and those who have the care of children. For the children's sake, for their own comfort, we are constrained to beg parents to think upon this matter, and to make a thorough trial of the plan of preparing food which we have recommended. Do not say, as some have said to us when urging the matter upon them, "Oh, this is too much trouble, I have not the time or patience for such a course;" or, "my children eat anything and everything, and I do not see but they are as healthy as your children who are so carefully attended." *It is not so.* Our word for it, adopt the course we have recommended, and you will find it time and health saved in the end, to say nothing of a saving in physicians' fees. And do not be satisfied with merely directing a servant to prepare the food thus, and so, but yourself see that it *is* done. If you will make the experiment for six months—only taking care to prepare the food as we have suggested, and to have a little care also that the stomach be not overloaded—we can almost warrant that your children will pass through the season with good health, and without their usual Summer complaints. The cherries, and currants, and berries are now ripening. If you allow the children to swallow these fruits unmasticated, they will go through the intestines in that condition, producing irritation all the way. If your children are healthy now, take the very course that will keep them so. Remember the adage that "an ounce of prevention is worth a pound of cure."

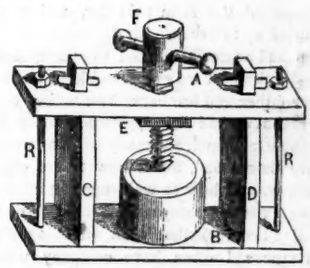
One word more. While looking out for your children, remember your own stomach; and, when through haste or carelessness you swallow lumps of meat, vegetables, or fruit, think what a work that stomach has got to do before it can use up the food. When you have a headache, or other ache, you may put it down as certain that there is some trouble, some clogging of the wheels, down in the engine room, where originates the force which keeps the wheels of the system in healthy action.

What Encouragement does for Children

How many parents make a sad mistake in considering their duty done if they reprove or correct their children when in fault. They go upon the principle that to do right is no more than the child's duty, needing no praise. A word of approval for a good act, often does more to encourage its repetition than a thousand reproofs for a contrary course. The distinguished painter, Benjamin West, referring to the fact that his mother kissed him eagerly when he showed her a likeness he had sketched of his baby sister, remarked: "That kiss made me a painter." We knew a little farmer boy, whose impulses were good, but he had only been accustomed to hear his trivial faults spoken of, and he finally came to consider that the only acts he could do worthy of notice were bad ones, and he lost all ambition to try to do well. But on one occasion the boy overheard a conversation in an adjoining room, between his mother and the family physician. The physician, partly in flattery to the mother it is true, remarked that "her boy was a bright lad, with good sympathies, and would doubtless make a good and great man," or words to that effect. The expression sunk deep into the child's heart. The fact that one, for whose opinions he had great respect, thought it possible for him to accomplish anything worthy, stirred his ambition, and he made a new resolve to be not only great but also good. He has since filled many stations of usefulness in society and in the church, and we have often heard him attribute all efforts he had made to do right, to those simple words of the physician.

Take another instance: A little lad received from an uncle the gift of two pennies. These were to him quite a treasure, for pocket money was something he knew nothing of. Some time after, a missionary agent called, and pictured in glowing terms the visit of the Flat-head Indians who came from beyond the Rocky Mountains in search of the White-man's book that told about the Great Spirit. The little boy listened to the narrative until his sympathies became interested, and going to his mother he asked for one of his pennies which she had kept laid away for him, and brought it to the agent to help buy bibles for the poor Indians. The agent, who was a venerable minister, took the lad upon his knee and talked to him of Zaccheus who gave half of his goods to the poor, and expressed a hope that he too would perhaps sometime teach the word of God to the heathen. The boy was previously of a nervous, desponding temperament, and had few lofty aspirations, or rather hopes; but he was changed from that hour. If so good a man as he thought the minister to be, had ventured to hope that he could ever accomplish anything, he would certainly *try*. A few subsequent words that the best way to *be* good, is to seek an interest in the Saviour's precious blood, and the aid of the Holy Spirit in striving to follow the example of Christ's life on earth, was the means of leading that boy to seek, and ever after strive to pursue an exalted christian course of conduct. We have heard him attribute all his future efforts for the good of others, to the simple incident we have related in his own words. Could we trace back to their sources, the springs of human actions, how many thousands of instances could be found, where a single word has influenced all future action. We have often compared these influences, trifling in themselves, to the little tongue (*i.e.*, the "frog" moved by the switch) upon the railroad track, which one can move with his finger; yet it is the *point* which keeps the ponderous engine upon the straight track, or if wrongly placed, starts it aside, when it is perhaps soon hurled down a steep embankment to certain destruction.

Parents, watch these turning points in your child's life; and while you reprimand for errors, do not forget to mingle words of encouragement.



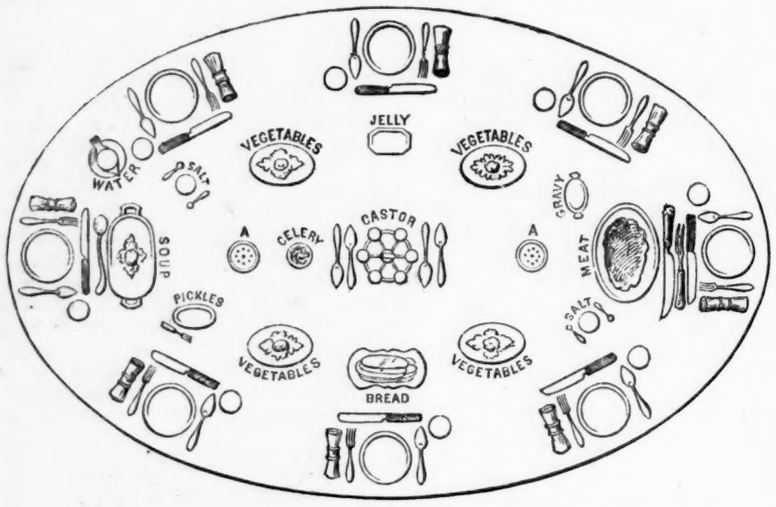
A Simple Cheese Press.

Mr. J. Pettee, of Salisbury, Conn., sends us a sketch and description of a cheap, simple *Cheese Press*, for farm or dairy use, where only small cheeses are to be made. Mr. P. claims originality for this, but he has not patented it, and he says "it is therefore lawful plunder." It is made thus:

A stout frame, *a*, *b*, *c*, *d*, is made of white oak plank, 1½ inches thick, and 16 inches wide. The pieces *a* and *b* are 30 inches long; *c* and *d* are 18 inches long. These are dovetailed at the corners, or fastened by a tenon and toggle. Iron rods, *r*, *r*, with screw and nut upon one end, are added to give strength. A carpenter's workbench screw, *f*, with the nut, *e*—the two costing but 50 cents—serve to give the pressure. The nut block, *e*, is nailed upon the under side of the upper cross piece. Mr. Pettee adds: "Your machine is then complete, at a cost of two dollars,—or less if you happen to be much of a tinker—and if you get a good screw, I will warrant the press to do the work properly."

"My dear Polly, I am surprised at you wearing another woman's hair on your head," said Mr. Smith to his wife. "My dear Joe, I am equally astonished that you persist in wearing another sheep's wool on your back.

Refuse even the favors of a mercenary man.



Setting out a Table—Hints on Deportment while at the Table, &c.

[A "Young Housekeeper" in the West writes us to the following effect: "My parents moved from New-England to Indiana before I was born, and they settled in a heavily wooded locality, where it took twenty years of hard labor to get the stumps out, the farm paid for, and a good house fitted up to live in. My Mother died before we girls had scarcely learned to 'keep house,' but we did the best we could, and kept our home with our father and brothers. You will of course conceive that we had little opportunity to learn *how* other people managed; and many and long were the chats we sisters had, about how to set out our table neatly, and how to wait upon it correctly, when we expected company. Well, I have now married and come further West, and being in good circumstances I often have company whom I would like to entertain in good style. Now I have for years looked to the *Agriculturist* as a guide, not only in the paternal garden, but in the paternal mansion (log house), and remembering that several years since your contributor Anna Hope, gave us some good advice, on setting out a table, it occurred to me to suggest that you would do a special favor, not to me only, but to many country housekeepers, and country girls too, if you would ask Anna H., to give us from time to time further *minute* directions, not only upon setting a table, but also on matters pertaining to household etiquette. Excuse the suggestion, but please respond to it if you find it consistent to do so...."

We have often thought of this subject and are thankful to "Young Housekeeper," for calling our attention to it. We forwarded her letter to Anna Hope, and are happy to give the following response, with the above sketch acompanying it, which we have had engraved for the *Agriculturist*.—Ed.]

It always gives me pleasure to learn that what I have written has been of use, and has met the wants of any individual. I do not consider it a small matter to have been a friend to a motherless daughter, and to have aided her in her efforts for improvement. These incidental rewards, which come to us from time to time, are among the sweetest, and most precious we receive; and it is impossible not to look upon those persons who thus welcome us, as personal friends. I am particularly interested in farmers' families. My grandfather was a farmer on the very outskirts of civilization, so far toward the cold North, that the smoke of no white man's chimney curled up to heaven between him and Canada. My father, although, by profession a lawyer, was a farmer also, and did more for agricultural improvement than almost any other man in his native state. I have inherited his love for mother earth, and his respect for those who till the soil, and it affords me true pleasure to comply with the request of "A Young Housekeeper" presented through our friend, the editor of the *Agriculturist*.

It is impossible not to form an opinion of the cultivation of a family from the appearance of the table. If there is nothing but mush-and-milk upon it, good taste will impart a grace which is as obvious, as in the getting up of an elaborate dinner. Simplicity and vulgarity are as far removed from each other as possible. In families of ordinary means simplicity is always desirable; and I shall have nothing to say to those who keep a retinue of servants, and sit down to dine with only flowers on the table—the courses of meat, &c., being on the side-board or side-table. Nor shall I have a word now to say for those who have more than one course of meat, followed by a dessert.

The Table.

I have sketched a table on which I have arranged a simple dinner, in a style suitable for a family keeping one or two domestics, or none. I have placed the soup on the table with the meat, although if there be any one whose business it is to wait upon table, it is better to have the soup served alone, the meat and vegetables being brought on when that is removed. The lady of the house distributes the soup. It is not considered proper, as a general thing, to be helped a second time to soup. The soup plates should be placed before each person, and not in a pile by the tureen. As each one finishes his soup, his plate may be removed by the waiter, and a plate for the meat set before him. If there is no waiter it is better for each one to retain his plate till all have laid down their spoons, and then one of the family can quietly put them aside.

There should always be regularity in the laying of a table. The dishes should not look as if they had fallen down like hail-stones, wherever it may happen. I have provided for four kinds of vegetables—if there are only two, they might be placed in the middle of the table, opposite the casters.* If bread and water are put upon the table they must be put in some unobtrusive place, and not interfere with the general arrangement.

If there are no domestics in a family, a small table, within reach of the lady's hand, may serve as a "dumb-waiter," and receive the plates that are to be changed. A "waiter" with two shelves, and a raised edge about them, as in a butler's tray—or in a trunk-tray—is sometimes desirable, and on this the dessert can be placed. There should be as little leaving the table as possible during meals. If the family wait upon themselves, some one person should do it, and not have a general jumping for a missing article. I have sat at tables where two or three, or even more, would be absent at the same time—one, perhaps, for bread, another for water, and others for something else. The *daughters* of a family can take turns in doing this. The lady at the head of the table should never leave her seat, till by rising, she intimates that the repast is finished. No member of the family should leave the table before all are ready to leave, without asking to be excused by the lady of the house, and it is far better, unless some urgent reason prevents, for all to remain till the close of the meal.

It is *not* now customary for those first served to wait till all are helped, thus insuring to themselves a cold dinner, but each one assumes his knife and fork as his plate is furnished.

The carver should serve meat as he cuts it, and not dissect a whole fowl at once, or fill his dish with fragments heaped up and lying about like a slaughtered army. Do not help too abundantly to either meat or vegetables. It is easy to pass a plate a second time. The present style is to pass the vegetables and let each one help himself. In cold weather the plates should always be warmed. It is unpleasant to see gravy stiffening on the plate.

The seat of honor for a guest is: for a lady, at the right hand of the gentleman; and for a gentleman, a seat at the right hand of the lady who presides at table. The lady of the house leads the way from the parlor to the dining-room—the gentleman follows the others. Where there is company to dine, and much form is to be observed, the most distinguished guest of the gentlemen is invited by the host to escort the lady, and the gentleman of the house takes upon his arm the most distinguished lady-visitor.

Habits of eating are important, and no little straw shows more plainly which way the wind blows, than these show one's acquaintance, or want of acquaintance, with society. When I was a child, I ate with my knife, and the great lesson was to teach me to put it to my mouth with the sharp edge *from* the lips. But now, in polite society, it is considered as great an offense against propriety to use the knife for any other purpose than to *cut* the food, as it then was to put it in the mouth in such a way as to be in danger of mingling my blood with my dinner.

"Don't put your knife in your mouth *so*—you will cut yourself," was then the reproof that fell upon the child's ears. Now he hears, or should hear: "Don't put your *knife* in your mouth—use your fork." I advise every child, and every young person to be very particular in regard to this mat-

* The engraver has spelled this word *castor*. We follow Mr. Webster in printing it *casters*. As far as we have observed, custom varies. Some say *cruet stand*, calling each bottle a *cruet*. Others adapt the word *caster* for each bottle used to cast pepper, &c., upon food, and call the whole, stand and bottles, *casters*. This is according to Webster, though he also gives the word *cruet* with the same definitions as *caster*. We must leave the ladies to settle this question. It may as well be settled first as last.

ter, for although it may seem unimportant, I am well assured that it is not. Our usefulness depends much on small matters, and whatever custom, and good society have made important, is really so, if we would be at home in good society. To use the knife, instead of the fork, betrays want of association with refined life.

Above all do not use the lips to wipe your knife, as I, not long since, saw done by a young gentleman (?). I suppose this did not mar the beauty of his dinner, but I am sure it did of mine. While I would say to the young, do not put the knife to your mouth any sooner than you would put it to your throat, which simply means, don't do it, I would at the same time say, never allow yourself to be troubled because your father or mother choose to retain the habits of their childhood. They have a right to do so, and no child has a right to treat them with any less respect or reverence because of it. Young persons are too apt to forget this, and to fail sadly in rendering to their parents the honor that is their due.

Clear, smooth, white table linen is of the utmost consequence. No table can look well without it. If table linen is starched, it should be only very slightly. If ironed, when quite damp, thoroughly ironed, it is glossy and stiff enough. Napkins are now considered essential, and should be found upon the table for breakfast, dinner and tea. They are very convenient at all times, to say the least. They should be large enough to protect the dress, and yet not as large as towels. It is quite desirable to have ivory, or other rings, numbered or marked with the initials, so that each person may have his own from meal to meal, unless clean napkins are used at every meal, and this makes too much washing, except where an establishment is so large that a laundress is attached to it. Soon after being seated at table, and before handling anything else, the napkin is quietly taken from the ring, opened and spread over the lap, and when there is occasion to wipe the mouth, the napkin should be used. A handkerchief is made for another purpose. At the close of the repast, if a ring is furnished, the napkin should be neatly folded and put through the ring. If there is no ring, it may be folded and laid by the side of the plate, or thrown loosely by it, according to the general style in which a family live, the number of domestics, &c. It is easy by a little observation to learn what is expected of you. I have been thus particular in regard to the use of a napkin, because I have seen those who did not seem to have any idea what it was for, and consequently did not use it when chancing to dine in families who would quite as soon think of leaving off the table-cloth as the napkins.

Do not pull the dishes askew as you help from them, and if I happen to dine with you, please do not flood my plate with gravy without asking if I like it, for you would almost certainly spoil *my* dinner, and my taste is like that of many others.

In waiting upon table have the water poured at the right hand of the one helped; everything but water should be passed to the left. As the glass stands at the right of the plate it is convenient to fill it there. It should not be lifted to be filled. In hot weather it is well to have a bit of ice put in each glass before filling it with water. In some families the bits of ice are set upon the table in a glass or china dish, to be used in water or milk as desired, and this certainly has a refreshing look on a warm Summer day. Bread and other things are passed to the left, because it is more convenient to receive them. If passed to the right it is very awkward to take them, unless with the left hand, and that no one ever thinks of doing.

The lady of the house should not finish her dinner before her guests, but should *continue to eat* till they lay down their knife and fork. It is extremely awkward for a visitor to find he is keeping a whole family waiting for him, and true politeness requires that we should make our friends, even in the smallest matters, as comfortable as possible.

When you have eaten all you wish, put your knife and fork side by side upon the plate, in close and loving union—with the handles at the right; and do not push the plate from you, but let it stand where you have used it.

Never use your own knife or fork to help yourself to salt, butter, vegetables or anything else. It is an abomination.

When you rise from the table do not put the chair back against the wall, or push it under the table, but leave it where it is.

When jelly or sauce is used at dinner it does not require a small plate, but should *be put on the dinner plate.*

Have the salts full, and the top nicely smoothed by passing a knife over it. Leave no salt scattered on the top of the glass. Be careful not to forget salt-spoons.

Do not touch your hair while at table, nor pick your teeth—and above all do not suck them. That is enough to drive a person of refinement away from the table. It is worse than going round Point Judith, to hear such a sound. The very thought of it is nauseating.

It is not customary to put *butter* upon the dinner-table. It is not needed with meat and gravy. Bread is to be eaten with meat—not bread and butter. Bread and butter is for dessert. With baked potatoes, however, butter is necessary—and it might be put upon the table where stand the dishes marked *A*. That, too, is a suitable place for any extra dish—as radishes, in their season. Other condiments, as French mustard, Worcestershire-sauce, which do not find a place in the caster, can stand there. Vases of flowers are always beautiful upon the table, and exert a most refining influence.

I have written so particularly that I have not made much progress. I have remembered "A Young Housekeeper's" request for "minute directions," and hope my suggestions may be such as she desires, even if she finds many of them unnecessary for herself. As rapid eating is neither consistent with good manners, nor good digestion, I must leave my friends at the table, to wait for the dessert—which will be ready next month.

ANNA HOPE.

CULTIVATING AND COOKING SPINACH.—To inquiries of Mrs. M. W., Howard Co., Iowa, we reply: Sow spinach seed at almost any time and in any place. When large enough for "greens," pick, wash, and boil fifteen or twenty minutes in water, skimming off any scum that arises, and, when soft, drain in a colander. Serve up with butter, pepper and vinegar, as may be desired. It is quite customary to put upon the plate with it, boiled eggs cut in pieces. We know of no better way than the above. Others may have some better way; if so, let our readers know it.

A certain lady we wot of is so high-minded that she disdains *common* sense. She is not the only one of that sort.

I say, fellow, how can I get at this liquid without drawing the cork, or breaking the bottle? "Push the cork in."

Preserving Fruit Fresh.

We have often, hitherto, condemned the practice of preserving fruits by boiling them down with sugar to an indigestible mass. We have had through the season, and have now, an abundant supply of tomatoes, cherries, peaches, blackberries, strawberries, huckleberries, pears, and other fruits, which are as fresh and good as they were when first gathered, and they have been kept thus with even less expense than in the old mode of making them into "preserves." These have been kept, mainly, in what are called self-sealing, or air-tight tin cans. The fruits were slightly cooked, and prepared as if for table use, and then sealed up perfectly air-tight, as described below. After several years' experience, we shall use the tin cans chiefly this year, with a few wide-necked glass bottles. We present herewith an outline of one of the cans.

They are made of various sizes, holding from a quart to a gallon.* In the upper end is a large opening, into which a cap is inserted with a screw, We have used those made by Wells & Provost, and by Ketcham & Co., about equal quantities of each kind, and find them both efficacious—not having lost a single can of fruit out of nearly one hundred put up. These cans are somewhat costly at first ($2.50 per dozen for quart sizes), but the saving in sugar, the better keeping of fruit, and the number of years they can be used, render them in the end cheaper than the old-fashioned mode, and they are infinitely better, both as regards taste and health. As stated on page 152, May number, these cans are too bulky for convenient transportation to a distance, and hence it is more economical to obtain from the manufacturers a quantity of the covers ready fitted with the screws, and have them put on to the main body of the can, which can be made by any good tin-worker. The covers can be closely packed, and the transportation is small compared with that of the full-sized cans.

MODE OF PUTTING UP THE FRUIT.

As each manufacturer furnishes full directions for doing this, we hardly need occupy two or three columns with details. We will, however, give some hints drawn from our own experience.

The fruits to be preserved are to be taken as near perfect ripening as may be, but not over ripe, nor in the least stale.

For all kinds of *berries*, take the clean dry fruit,

* The engraving above is only a general outline. Most cans of recent make have a wider opening than the one here shown, which is a desirable improvement.

avoiding washing it, unless really necessary; fill the cans *full*, and pour in a syrup, made by boiling together good white, or better, refined sugar, and water. We use one pound of sugar to a pint of water. Those putting up fruit for marketing say that so much sugar shrinks the fruit, and does not leave so good a flavor as if only ¾ lb, or even ½ lb. of sugar be used to the pint of water. A small amount of syrup will fill the spaces between the fruit. It is to be poured in scalding hot. Let the cans be entirely filled with it. Next put on the cover and screw it down, but not tightly. Then set the can, or cans into a common wash-boiler, or other convenient vessel, containing hot water enough to nearly cover them, and keep the water boiling for about fifteen minutes. Lift them out and remove the cover quickly, that the steam may escape in a volume, and carry off with it the most of the inclosed air that was held in the syrup, and in and around the fruit. The cap should remain off but a few seconds, and then screwed on loosely as before, and the can returned to the boiling water for four or five minutes, or until it is well heated. Then take it out and quickly screw down the cover as closely as possible with the aid of the wrench that goes with the cans. While still hot, pour over the top of the cans some melted bees-wax, to cover every possible opening, and let it cool. You may then set the cans away in almost any place, and depend upon finding, after six months or a year, a nice lot of fresh berries, retaining all their natural aroma and deliciousness. The sugar used will sweeten them just about enough for the table.

Peaches, cherries, plums, apricots, quinces, apples, &c., may all be put up in the same manner. The pits should be removed from peaches, and cherries are all the better for being first stoned, besides the advantage of getting more fruit into a can. It is, perhaps, better with all these fruits, except peaches, to cook them in the cans five or ten minutes longer than recommended for the berries. The main object of cooking at all is to expel the inclosed air. They may all be heated the required time *out* of the cans, and poured in, boiling hot, making the cans even full, and sealing them up at once; but boiling them inside the cans retains the flavor much better, and the extra labor is very trifling, after a little practice.

Apples, pears and quinces are better for being cooked half an hour to an hour. Tomatoes we cook in the cans for about half an hour. We also put up a large quantity last Fall, as follows: They were skinned, cut up and stewed in a kettle until reduced nearly one-half; then poured boiling hot into the cans, previously warmed, and immediately sealed. Those prepared thus occupied less room, and they are now apparently as good as those cooked within the cans, there being little aroma in the tomato to escape while cooking in the air. Indeed, all kinds of *stewed* sauce, when sweetened and made ready for the table, may be put hot into the cans, sealed up, and kept all ready for immediate use, a year or more afterwards.

Rhubarb, stewed soft, and sweetened as for pies, comes out nice and fresh in Mid-Winter or Spring. Currants are also similarly kept, but these should be fully *ripe*, and be well cooked and sweetened with a strong syrup. Green peas, beans and corn may also be kept, but they need to be cooked in the cans for at least six hours, or they are liable to spoil. We recently tried a can of corn put up by Wells & Provost two years previously, and found it in excellent condition and flavor.

Glass or porcelain bottles and jars, if *well* fitted with good corks or stoppers, may be used precisely like the cans, only that in boiling them, the bottles must be put into cold water, and gradually heated to boiling at first, to prevent breaking them. Any sudden change of temperature is liable to crack the glass, and on this account they are less convenient, though preferable to tin in some respects—especially for very sour fruit. The corks dipped in melted beeswax must be pressed in while the contents of the bottle are still boiling hot, and then well covered over with melted beeswax.

For small families, the quart cans are preferable to those of larger size, since a quart of fruit is enough to open at a time. When first opening a can, we advise to empty the entire contents immediately into a glass or earthern vessel; and at once scald the can, dry it, and set it away in a dry place for another year's use. If this be done, they will remain bright and clean, and last for many years.

Where the screw-top cans, or good bottles or jars can not be obtained, all the fruits &c., named above, and prepared in the same manner, may be kept in plain tin cans, with the aid of a soldering iron. Prepare the cans with an opening in the top, say 2½ to 3 inches in diameter; fill them *full* with the fruit and syrup; solder tightly upon the opening, a circular piece of tin with a pin hole in the center. Set into boiling water, and when the fruit has cooked well, lift the can out of the boiling water, which should just come up to the top, and drop upon the pin hole a bit of solder, or press down upon it a small lump of beeswax melted on its under side.

We shall be happy to answer any further queries next month, if the particulars are not stated above with sufficient minuteness. We advise our readers to dispense with all the old fashioned, unhealthy "preserves," and try the plan of keeping fruits in a *fresh state*

Currant Wine.

To inquiries of G. B. Forbush, Wis., and others, we offer the following, contributed by an intelligent, practical correspondent:

Squeeze the fresh, but fully ripe berries, till the juice ceases to run freely. Pour over the *pulp* as much water as there is juice, and press again. Repeat the process which will extract all the juice and form a liquid of the proper consistence, viz.: two parts water and one part juice. Add one third of its weight of white sugar and place in wide open vessels, in a moderately cool place to ferment. In two or three days it will be ready for bottling. Great care is required that the fermentation be not too rapid, tending to form vinegar. When this is the case, place in a cooler situation. It is sometimes desirable to have the fermentation go on quite slowly, in which case put it in casks, leaving the bung open and keep in a cool place for a week, or two even, before drawing off or bottling. Add cloves or cinnamon to flavor it if you desire.

Recipes.—Many valuable ones are on hand waiting room.

A woman was testifying in behalf of her son, and swore "that he had worked on a farm ever since he was born."

The would-be-smart lawyer, who cross-examined her, said: "You assert that your son has worked on a farm ever since he was born?"

"I do."

"What did he do the first year?"

"*He milked.*"

OUR BASKET

Into which are thrown all sorts of paragraphs—such as NOTES *and* REPLIES *to* CORRESPONDENTS, *with Useful or Interesting Extracts from their Letters, together with Gleanings of various kinds from various sources.*

To Correspondents.—There are probably more than two hundred thousand intelligent regular *readers* of this Journal, very few of whom do not have, during each year, some thought or suggestion, worthy of communicating. From such an aggregation of mind, we have a vast store-house to draw from. It will not be wondered at, however, that we find it utterly impossible to refer by name to a considerable portion of the valuable letters and communications received. We often wish all our subscribers would pay for a paper four times as large even as this, and published four times as often! We should find little trouble in filling it well; our present most laborious task is selecting and *condensing*.

Mulching Explained.—W. Cratshy, Trumbull Co., O, and others. By the term *mulching*, we mean a coating with straw, leaves, old manure, &c. Where we allude to mulching about newly planted trees, we simply mean spreading straw, or leaves, around the roots to keep the earth from drying up.

Toads in the Garden.—G. T. Schank, of Cecil Co., Md., says toads are the best protection for cucumber vines. He places bits of boards near the vines to afford the toads a shelter from sun and rain and gives his boys six cents for every new toad they bring into the garden. To use his own language: "I would as lieve a person would kill one of my chickens, as a toad among my vines." We are of nearly the same opinion, and have, during the past month, watched with no little interest the "ugly toads" in the garden hopping around among the plants and gobbling down the insects by the dozen—as many at a time as their capacious mouths could compass.

Currant Lice.—Dr. Sylvester, Wayne Co., N. Y., writes that, in the absence of whale oil soap, he destroyed these with a solution of one pint of soft soap and six pints of water. The cheap garden syringe described on page 213, will be a good instrument to apply it with, saturating both under and upper sides of the leaves.

Prairie Flowers.—J. F. Sanborn, Woodbury Co., Iowa—The "wild flower" you inclosed, must be very beautiful when growing upon the prairie. It would be highly prized here at the East, on account of its variegated foliage. Can you collect a few seeds during the coming season? Some enterprising florist would not only benefit others, but find it a paying enterprize to collect a variety of the flowers growing so abundantly on the prairies, and introduce them to gardens at the East.

K. P. Corn and Poland Oats at the South.—S. J. Wheeler, P. M. Murfreesboro, N. C. in a business letter dated June 16, writes that Mr. Parker of that place requested him to say that: "The King Philip Corn and White Poland Oats, received in our distribution, were planted April 15th.; and at that date (June 16) the oats were 4 feet high, and beginning to head. From 25 to 45 stalks grew from the single grains, which were planted 6 inches apart, in drills 2½ feet apart; the stalks branch so as to even meet across from drill to drill. The corn commenced tasseling at 2 feet high. He thinks it will not be profitable. Both corn and oats were side by side, on a rich, moderately stiff soil. The Sugar Beets look very well, and will succeed in North Carolina."—[The K. P. corn is adapted to short, cold northern seasons, and to very late planting in the Middle States. It is of small growth, and needs to be planted close to realize a large yield.—ED.]

Cranberries.—A. McMeekin, Canada West—A Hayward, Middlesex Co., Mass—P. Whitman, Berks Co., Pa., and may others, make sundry inquiries respecting cranberry culture, upland cranberries &c. Most of these questions we answered on page 82 of this volume (March No.), pages 9, 31, 130, 204 and 212 of last volume. The subject is treated at length in the articles referred to, but we will publish any further information that may be received. The plants desired are advertised in this journal from time to time. We are not prepared, from personal observation, or from information, to recommend the upland variety.

Indian Cetonia (Cetonia Inda).—Wm. Day, of New Jersey. The beetles you enclose are the above-named variety, or order, of the Coleoptera family. They are often seen the latter part of April, or first of May after which we miss them until about the middle of September, when new broods appear to come forth from the ground, and often attack corn stalks, pumpkins and peaches. They are especially fond of the latter, burrowing in and greedily devouring them. They are also frequently found upon the trunks of trees, as though after the juices or sap. As they are particularly fond of sweets, the best way to destroy them is to entrap them in open bottles, partially filled with sweetened water.

Agricultural Exhibitions for 1858.

STATE.

Place.	Where held	Date.
California	Marysville	Aug. 23—28
Missouri	St. Louis	Sept. 6—11
Amer. Pomol. Soc.	New-York	" —14
No. Western Virginia	Wheeling Island	" 14—16
Vermont	Burlington	" 14—17
Ohio	Sandusky	" 14—17
New-Jersey	Trenton	" 14—17
National Horse Show	Springfield, Mass.	" 14—17
Illinois	Centralia	" 14—18
Rhode-Island	Providence	" 14—18
Maine	Augusta	" 21—24
Pennsylvania	Pittsburg	Sept. 28 Oct. 1
Iowa	Oscaloosa	" 28 " 1
Kentucky	Louisville	" 28 " 2
Wisconsin	Madison	Oct. 4— 8
Indiana	Indianapolis	" 4— 9
New York	Syracuse	" 5— 8
New Hampshire	Dover	" 6— 8
Connecticut	Hartford	" 12—15
Alabama	Montgomery	" 18—22
United States	Richmond, Va.	" 25—30
North Carolina	Raleigh	Nov. 2— 6
South Carolina	Columbia	" 9—12

COUNTY FAIRS.

ILLINOIS.

Pike	Pittsfield	Sept.	8—10
Montgomery	Hillsboro	" 28 Oct.	— 1
Edgar (Wabash Valley)	Paris	" 28 "	1—
Adams	Quincy	" 29 "	1—
Tazewell	Tremont	Oct.	6— 7

MAINE.

Oxford	South Paris	Oct.	5— 7
Androscoggin	Lewiston	"	5— 7
West Somerset	Anson	"	6— 7
York	Saco	"	12—13
North Penobscot	Lee	"	13—14

MASSACHUSETTS

Middlesex North	Lowell	Sept.	15—17
Middlesex South	Framingham	"	21—22
Bristol	Taunton	"	22—23
Housatonic	Great Barrington	"	23—24
Worcester	North Fitchburg	"	24—
Hampden	Springfield	"	28—30
Norfolk	Dedham	"	28—29
Middlesex	Concord	"	29—
Plymouth	Bridgewater	"	29—30
Essex	Danvers	"	29—30
Worcester South	Sturbridge	"	29—
Worcester West	Barre	"	30—
Hampden East	Palmer Depot	Oct.	5— 6
Worcester	Worcester	"	6— 7
Franklin	Greenfield	"	6— 7
Barnstable	Barnstable	"	6— 7
Berkshire	Pittsfield	"	6— 8
Hampshire	Amherst	"	12—13
Nantucket	Nantucket	"	13—14
Hampshire, Franklin and Hampden		"	13—14

NEW-YORK.

Saratoga	Mechanicsville	Sept.	7— 8
Monroe	Rochester	"	14—17
Oswego	Mexico	"	15—17
Chenango	Norwich	"	21—24
Onondaga	Syracuse	"	22—23
Livingston	Geneseo	"	22—24
Washington	Salem	"	23—24
Yates	Penn Yan	"	23—24
Skaneateles	Skaneateles	"	29—
Ontario	Canandaigua	Sept. 29	Oct. 1
Seneca	Farmersville	Oct.	13—15
Montgomery	Fonda	"	26—

OHIO.

Ashtabula	Jefferson	Sept.	7— 9
Fayette	Washington	"	7— 9
Hamilton	Carthage	"	7—10
Summit (Union)	Twinsburg	"	8—10
Clermont	Bantam	"	14—17
Portage	Ravenna	"	20—22
Clermont	Olive Branch	"	21—24
Geauga	Burton	"	22—24
Lawrence	Ironton	"	22—24
Lake	Painsville	"	22—24
Noble	Sarahsville	"	23—24
Marion	Marion	"	26—27
Green	Xenia	"	28—30
Knox	Mt. Vernon	"	28—30
Geauga (Free)	Claridon	"	28—30
Adams	West Union	"	28—30
Hardin	Kenton	"	29—30
Champaign	Urbana	Sept. 28	Oct. — 1
Belmont	St. Clairsville	" 28	" — 1
Crawford	Bucyrus	" 29	" — 1
Richland	Mansfield	" 29	" — 1
Columbiana	New Lisbon	" 29	" — 1
Delaware	Delaware	" 29	" — 1
Tuscarawas	New Philadelphia	" 29	" — 1
Mahoning	Canfield	Oct.	5— 7
Stark	Massillon	"	5— 7
Licking	Newark	"	6— 7
Washington	Marietta	"	6— 8
Butler	Hamilton	"	6— 8
Summit	Akron	"	6— 8
Williams	Bryan	"	6— 8
Sandusky	Fremont	"	6— 8
Morgan	McConnellsville,	"	6— 8
Harrison	Cadiz	"	6— 8
Erie	Huron	"	6— 8
Clark	Springfield	"	6— 8
Defiance	Defiance	"	6— 8
Putnam	Kalida	"	7— 8

PENNSYLVANIA.

Tioga	Wellsboro	Sept.	29—30
Crawford	Conneautville	Oct.	5— 7
York	York	"	6— 9

Boys' and Girls' Own Columns.

About Microscopes.

This month we will write something about the microscope, which we hope will both interest and instruct our young readers—and perhaps older ones, too.

We suppose you all know that a *Microscope* is an instrument which *magnifies* objects, that is, makes them look a great deal larger than they really are. With the aid of this we can make a very small thing—one so small that we can hardly see it—appear so large that the minutest part of it will appear plain to the eye. And this instrument reveals a world of wonders to us, which, without its aid, we should never have dreamed of. There are thousands of curious common things which we see and handle daily; but there are a thousand times as many very curious things that we have not seen. The moss by the brook or on a tree, the flowers, the insects, are all familiar, and you perhaps think you have seen all that is interesting or beautiful in them. But in their delicate structure are things more marvelous than their external or visible forms and colors. For example, the bluish mold on an old shoe, or on stale bread, looks like an irregular mass of filth; but the microscope presents the smallest particle of this mold as a beautiful forest of trees—and such it is—with branches and foliage as perfect as the finest grove of oaks. The eye of the common house-fly appears but an oval globule, without special beauty or interest; the microscope shows it to be composed of many hundreds of perfect little eyes placed side by side. And so it is of the different parts of various insects, plants, etc.

To see all these things in their greatest perfection, we need large costly instruments; but one object of this article is to show you that there are instruments so simple and cheap that almost any boy or girl could get one perfect enough to show much that is hidden to us without its aid. We have, for several years, carried in our vest pocket a microscope that cost less than three dollars, which has answered in most cases where we have desired to examine insects, plants, or soils, to ascertain their structure.

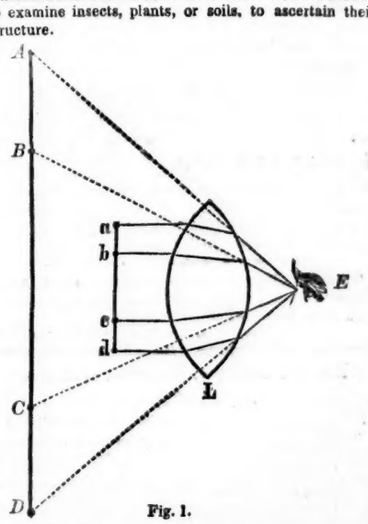


Fig. 1.

But first let us try and understand something of *how* it is that a bit of glass magnifies a small object—though we must refer you to your school books for a *full* explanation of the laws of light, etc.

We *see* an object by means of rays of light which come from *every part* of it, and entering the eye, make an impression upon it. These rays of light usually go in straight lines, and we suppose a thing, or any part of a thing, to be just where the rays of light from it *appear* to come from.

But these rays are often turned out of their course, as when they pass through water, or glass. Let us examine fig. 1, which we have drawn to illustrate this. *L* is a solid piece of clear glass of oval shape, called a *Lens*, which is placed between the eye *E*, and the little rod *a, b, c, d*. Upon the rod we have marked the four dots, *a, b, c, d*. Now, a ray of light going from *a* through the glass is bent down a little, and as it goes out on the other side, it is bent down still more, and goes *straight* into the eye. But the eye is deceived by the *direction* in which the ray entering it, appears to come from, and so the dot *a* appears to be at *A*. On the contrary, the ray going from *d*, is bent upward, and the eye sees *d* at *D*. For the same reason *b* is seen at *B*, and *c* at *C*. But there are millions of little points between *a* and *d*, and these are *seen* all along between *A* and *D*. In this way the short line *a—d* is, to the eye, lengthened to *A—D*. As the glass *L* is round, the line is *widened* also at the same time by other rays; that is, it is magnified in every direction. Any other small object, put in the place of the rod, would, in like manner, be enlarged. Its myriads of points would be spread over greater apparent space, so that the eye could examine each minute part.

Now, a *microscope* is neither more nor less than a *convex lens*, that is, a piece of clear glass, shaped, like *L* in fig. 1. It is usually put into a frame, as in *a*, fig. 2, for convenience of holding and carrying it. When a higher magnifying power is desired, we often place two glasses or lenses, one upon the other, to bend the rays more than one would do, and this makes the object look still larger. In

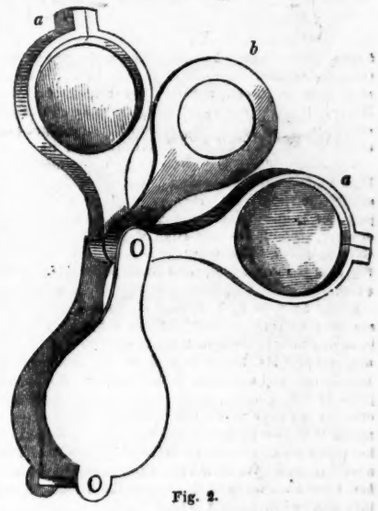


Fig. 2.

fig. 2, there are two of these glasses, *a, a*, which are put together when used, so that we see an object through both of them. In this instrument there is also a thin slip of metal, *b*, with a hole through the centre of it. The ob

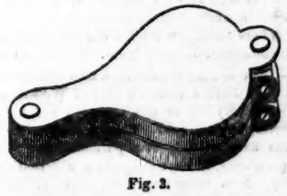


Fig. 3.

ject of *b* is to cut off superfluous light from other objects, and admit, only, rays from the object directly before it. It also prevents distorted rays entering the eye from the imperfect edges of the glass.

Fig. 3 shows fig. 2 closed up, for carrying in the pocket. They are usually just about the size of our engraving, though sometimes smaller.

But, for reasons we cannot now explain, a very small glass or *lens* is superior to a large one, and good magnifying glasses are seldom made larger than those shown in figs. 4 and 5.

In fig. 4, *a* is a piece of glass, partly ground out in the middle, so as to leave a little *lens* upon each end. It is then put into the short tube having the twisted handle and ring to hold it by. When not in use, the double cap, *b*,

Fig 4.

is closed over the glass, to protect and keep it clean. As the whole apparatus is no larger than our engraving of it, you will see that it can be put into the pocket, or even carried upon a watch-chain, ready for use at any time you want to examine an insect that is destroying your garden or field plants, or look at any small object, or a portion of one. To use it, the object to be examined is brought near the eye, and the glass interposed, as shown in fig. 1. A full light should shine upon the object to be examined; and a little practice is necessary to get it in just the right position, and also to learn to hold the glass steadily.

Fig. 5. (next page,) is another form of casing. *a* is the tube holding the double lens, and *b* the double cap. The two cuts are the same instrument, opened and closed.

The form shown by fig. 3 is quite common. Figs. 4 and

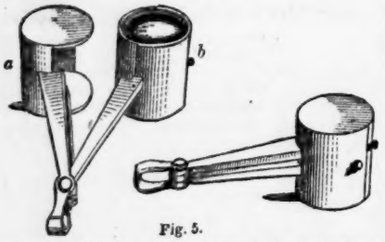


Fig. 5.

5 are somewhat new. You have seen in the *Agriculturist* several magnified drawings of insects, such as the pear-slug, bark-louse, etc., made by our contributor, A. O. Moore. In examining and drawing these insects, he generally uses only the little instrument shown by fig. 5; and at our request, he made for us this drawing of it.

The case of fig. 2 is usually horn, or German silver. Figs. 4 and 5 are made either of German silver, or pure silver—the former is cheaper, and for all practical purposes, is just as good. Fig 2 costs from $1,50 to $2,50, or more, according to perfection of glass, etc. Fig. 4, in German silver, costs about $2,50, and in silver, $3,00. Fig. 5, in German silver, costs about $3,00, and in silver, $4,00.

Either fig. 5, or fig 4, is very convenient, and, as you see, the price is not so great, but that a boy or girl may, by saving their pennies, in time, be able to own a good microscope. Mr. Moore is such an enthusiast with the microscope, and so used to it, that he ought to be able to judge of their quality; and though he is only a publisher of books, we have urged him to get a lot of these instruments, to be sent by mail to any who may want them. He has partly promised to do so. If he does, he will probably advertise them. We do not know that those illustrated in figs. 4 and 5 are made on this side of the Atlantic, though they may be—they ought to be.

We think great *practical* good would result, if farmers, with, or even without the aid of the microscope, would study more carefully the habits of the minute insects that commit such vast depredations upon our wheat and other grains, as well as upon our fruits. Many millions of dollars are annually lost by insects so small that few persons ever see them. We hope our boys and girls at least, will commence to study them.

P. S.—Since writing the above, a new idea has occurred to us. We have a standing offer of Webster's large Dictionary to every boy or girl who will get forty subscribers during any one year. Several great boxes full of these books have already been purchased this year and sent as premiums, to boys and girls in different parts of the country. Now, though we have asked Mr. Moore to get a supply of the Microscopes, we have a notion of getting some also—if we can—and offer them as premiums to boys and girls, for getting a smaller number of subscribers than is required to secure a Dictionary. We will see what we can do by next month.

Books.

With much extra labor during the month, in getting the machinery of our New Edition (German) of this journal into regular operation, we have scarcely had time to look into the new books that have been placed upon our desk. We must not fail, however, to announce one new work:

A MANUEL for the Propagation, Planting, Cultivation, and Management of the PEAR TREE, with descriptions and illustrations of the most productive of the finer varieties, and selections of kinds most perfectly grown for market; by Thos. W. Field. A. O. Moore, Publisher; 286 pages. Price, $0.75.

We have been cognizant of the progress of this work for many months past, and we can bear testimony to the fact that a very great amount of diligent labor has been devoted to its preparation. It contains a large number of original and valuable illustrations, and condensed but good instruction for all who are cultivating, or proposing to cultivate this excellent fruit. Though we may differ somewhat from the author in his theory of manuring trees, the value he places upon the dwarf pear, and in the feasibility of growing pears as a generally profitable market crop, yet much that is contained in this work is of a highly instructive and valuable character, and we commend the book to general notice.

Good and Bad for Seedsmen.

This heading is rather paradoxical, but it is true, nevertheless. From all we can gather, we judge that about one-half of all the seed sowed or planted between April 25th and May 15th literally rotted in the ground. With us, seeds germinated finely when planted in pots and carried in during the long rains, while other seeds, taken from the same packages, and planted in the open ground, failed to grow at all. Indeed, some garden and flower seeds have only recently come up, after the second and third planting. The fine weather in April very naturally tempted people to hurry seed into the ground. A lady of our acquaintance planted 81 varieties of flower-seeds, received from friends in various parts of the country, and scarcely half-a-dozen grew at all. These numerous failures have caused an unusual demand for seeds, and so far, it has been *good* for seedmen. But, on the contrary, a great number of people who have lost their seed, have laid the blame entirely at the door of the sellers. These complaints, most frequently unjust, have been long and loud, and certainly, so far, it has been *bad* for the seedsmen. We have suffered in common with these dealers, for though we have charged nothing for the 135,000 parcels of seed we distributed, we shall lose much of the pleasure and credit we should have received, had not the weather been such as to injure, if not destroy, the growth of very many of those sent out. We know, by actual trial, that all our seeds were good, yet, judging from the results on our own grounds, we shall be very glad to be assured that one-half, or even one-third of the seeds distributed have grown. But we, like our readers, have no other way but to try again, hoping that favoring skies in the future may make amends for the past.

Business Notices.

☞ *Fifty Cents a Line.*

National Horse Exhibition at Springfield Mass., in September.

The brilliant success of former Horse Shows at Springfield is notorious. As collections of distinguished men and horses, they are without rivals. A third Exhibition is set down for September 14, 15, 16 and 17 next, and the arrangements are on a more liberal scale than heretofore. Some of the first citizens of Springfield constitute the board of managers, with George Bliss, the well known president of the Michigan Southern railroad, at its head. A new and splendid 60 acre Park, with both a half mile and mile track, is set apart as the Exhibition ground. The premiums offered amount to *three thousand dollars*, covering 24 different classes of animals—thorough breds, stallions of various kinds, mares, colts, spans, fancy horses, family horses, farm horses, saddle ditto., ponies, etc.,—and embracing two premiums of $200 each, eleven of $100, two of $75, and thirteen of $50. A splendid state prize banner, costing $100, is to be presented to the agricultural society of the state that contributes the largest number of valuable animals. All animals and their grooms, destined for the Exhibition, will be passed free both ways over all the railroads leading into Springfield. There is the utmost confidence felt by the managers in the grandest collection of horses on this occasion ever seen in the United States. They have already had the promise of the presence of some rare blood animals from Kentucky, the property of a distinguished politician of that state. Those who desire full particulars as to the Exhibition can secure them by addressing George Dwight, chief marshal, or J. N. Bagg, secretary, Springfield, Mass.

Thorough-bred Devonshire and Ayrshire Cattle.—Bulls, bull-calves, heifers and cows, with Herd Book pedigrees, for sale low, by
Alfred M. Tredwell, 251 Pearl-st.

Market Review, Weather Notes, &c.

AMERICAN AGRICULTURIST OFFICE,
NEW-YORK, May 23, 1858.

The following remarks refer to a period of 30 days preceding the above date. During this period the Wholesale Produce Markets have fluctuated considerably. With increasing receipts during the month, receivers have manifested no disposition to hold on to their stock. Owing to the continuous rains and reports of insect ravages, there has recently been a fair inquiry from speculators. This demand has also been stimulated by the accumulation of money in the N. Y. banks. Reduction in freights to foreign countries has occasioned a better inquiry from shippers. With the return of good weather and improved prospects of good crops, speculation has died out, and the market for wheat closes heavily. The first arrival of new wheat (60 bush. from Savannah) reached this port June 8th.; it was sold by sample on the previous day, at $1,60 per bush. The first lot last year, arrived June 24, and sold for $2,50 per bush. New flour from the Plant Mills, St. Louis, the first from the West, was sold at $8, Saturday, June 16.....Corn is in light supply, but with limited request, and closes with a downward tendency in prices. Rye is scarce and closes with a rising demand and price.....Barley, dull, and little offering.....Oats, for a time active and buoyant, are now plentier and languid .....Cotton was lightly dealt in and declined ⅛c. @ ⅛c. per lb, but within the past week, with a livlier demand the decline has been fully recovered, and the market closes firmly. Available supply, 88,104 bales against 56,850 at same date last year. Total export this season, 2,941,978 bales; against 2,859, 343 bales for same time last year.....Provisions have been in fair demand, except Hog products which have been in superabundance, with low and downward prices...Salt Beef, firm...Butter and Cheese, plenty and heavy...Hay and Hops, freely inquired for at full rates...Grass Seed and Hemp, inactive...Rice, easier rates, but attracting considerable attention from shippers... Tobacco, less active, yet steady...Domestic Wool, was at first active, but the prospect of increasing clip, for a time drew attention from old stock, the latter, however, being now in small supply, holders are firm, though the present feeling is depressed by the expectation of a large crop. We have heard of no important sales of new wool....Other articles of produce have presented no noticeable variation from the previous month.

CURRENT WHOLESALE PRICES.

	May 25.	June 22.
FLOUR—Com'n to Extra State	$3 80 @ 4 15	$3 80 @ 4 05
Common to Fancy Western	3 80 @ 4 15	3 80 @ 4 15
Extra Western	4 00 @ 7 00	4 10 @ 7 00
Fancy to Extra Genesee	4 15 @ 6 50	4 25 @ 6 50
Mixed to Extra Southern	4 40 @ 7 00	4 50 @ 7 50
RYE FLOUR—Fine and Super.	3 00 @ 3 40	3 00 @ 3 37
CORN MEAL	3 50 @ 3 87½	3 50 @ 3 90
WHEAT—Canada White	1 02½@ 1 20	1 02 @ 1 15
Western White	1 05 @ 1 22	1 00 @ 1 25
Southern White	1 08 @ 1 30	1 15 @ 1 33
All kinds of Red	80 @ 1 10	80 @ 1 10
CORN—Yellow	75 @ 77	77 @ 79
White	72 @ 74	75 @ 78
OATS—Western	41 @ 42½	45 @ 46
State	39 @ 41	44 @ 45
Southern	26 @ 32	34 @ 39
RYE	67 @ 69	71 @ 71½
BARLEY	56 @ 64	50 @ 60
White Beans	1 06½@ 1 12½	1 06½@ 1 12½
Black-eyed Peas, per 2 bush	3 37½@ 3 50	3 37½@ 3 50
HAY, in bales, per 100 lbs	40 @ 70	40 @ 70
COTTON—Middlings, per lb	12¼@ 12½	12¼@ 12½
RICE, per 100 lbs	3 25 @ 4 00	3 00 @ 3 75
HOPS, per lb	4½@ 7	4½@ 7
PORK—Mess, per bbl	17 85 @18 00	@16 80
Prime, per bbl	14 @14 37½	13 75 @13 80
BEEF—Repacked Mess	11 75 @13 50	12 00 @13 50
Country mess	10 50 @11 50	10 75 @11 50
" prime	8 00 @ 8 50	none selling.
HOGS, Dressed, per lb	6 @ 6¾	5 @ 6
Lard, in bbls, per lb	11½@ 11½	10½@ 11
BUTTER—Western, per lb	12 @ 19	10 @ 17
State, per lb	14 @ 25	12 @ 22
CHEESE, per lb	6 @ 8	4 @ 8
EGGS—Fresh, per dozen	11 @ 12	10 @ 12½
FEATHERS, Live Geese per lb	40 @ 50	40 @ 50
SEED—Clover, per lb	7 @ 7¾	7 @ 7½
Timothy, per bushel	1 75 @ 2 25	1 75 @ 2 00
SUGAR, Brown, per lb	5½@ 7¾	5 @ 7½
MOLASSES, New-Orleans, pr gl	35½@ 37	36 @ 37
COFFEE, Rio, per lb	9¾@ 11½	9¾@ 11½
TOBACCO—Kentucky, &c. pr lb	6 @ 17	6½@ 16
Seed Leaf, per lb	9 @ 35	9 @ 35
Wool—Domestic fleece, per lb.	27 @ 45	27 @ 45
Domestic, pulled, per lb	22 @ 35	25 @ 38
HEMP—Undr'd Amer'n pr ton	105 @115	110 @125
Dressed American, per ton	170 @185	170 @185
TALLOW, per lb	@ 10¾	9½@ 9¾
OIL CAKE, per ton	36 00 @36 50	31 50 @37 50
POTATOES—Bermudas, per bbl	4 00 @ 5 00	5 00 @
Mercers, per bbl	2 25 @ 2 75	2 50 @ 2 75
Peach Blow, per bbl	2 25 @ 2 75	2 25 @
Carters, per bbl	2 75 @ 3 00	2 75 @ 3 00
Charleston, per bbl		@ 3 75
Turnips—New, per 100 bnchs.		3 00 @ 4 50
Onions, per 100 bunches		4 00 @ 5 00
APPLES—Russets, per bbl	3 50 @ 5 00	5 00 @ 6 00
New Charleston, per bbl		@ 2 50
Cherries, per lb		8 @ 12
Strawberries, per 100 baskets		2 00 @ 4 00
Asparagus—per bunch	12 @ 18	10 @ 12
Green Peas—L. I. per bush	@	50 @ 62
Rhubarb—per 100 bunches	3 00 @ 4 00	2 50 @ 3 50
POULTRY—Fowls, per lb	14 @ 15	14 @ 15
Chickens, Spring, per pair	56 @ 1 00	50 @ 75
Ducks, per pair		75 @ 1 25
Turkeys, per lb	15 @ 18	15 @
Pigeons—Wild, per doz		80 @ 1 00

Total receipts and the total sales of Breadstuffs for 24 business days, ending with to-day, and comparison with 27 business days the previous month:

RECEIPTS.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley*	*Oats.*
27 bus. days *last* mon	274,700	539,000	502,200	26,760	.....	173,350
24 bus. days *this* mon	423,578	1,367,800	903,125	38,850	2,100	208,450

SALES.	*Flour.*	*Wheat.*	*Corn.*	*Rye.*	*Barley.*
27 business days *last* month	347,470	730,250	741,600	74,400	101,300
24 business days *this* month	415,100	1,632,000	847,000	76,500	37,500

Exports from port of New-York from Jan. 1 to June 14 both days included.

	1857.	1858.	Increase in 1858.
Wheat Flour, bbls	400,384	635,800	235,516
Wheat, bush	923,157	1,503,986	580,829
Corn, bush	1,487,957	1,389,957	.....
Corn Meal, bbls	25,475	34,952	9,477

N. Y. LIVE STOCK MARKETS—BEEVES—Receipts for our weeks ending June 16, were 12,435, or 995 less than during the four weeks preceding. Receipts and variation of prices were for weeks ending May 26, 2,892 head, averaging ¼c. advance; June 2, 3,572 at ¼c. decline; June 9, 2,856, at ¼c. advance; June 16, 3,115, with an advance of ¼c., making a rise of 1c. during the month.....June 16, prices ranged on estimated dressed weights as follows: First quality 10c. @ 10¼c.; Average of all sales 9¾c.

VEAL CALVES have been in large supply for the past four weeks, the receipts footing up 3,625 head. They are now selling at 5c. @ 6c. per lb gross weight. A few of the finer bring 6¼c.

SHEEP AND LAMBS.—Receipts continue to increase, the numbers for the past four weeks being 24,212 against 20,585 for the previous four weeks. Prices have fluctuated somewhat, and are now lower than they were last month. The sheep are all sheared, and bring 4¼c. @ 5c. per lb. live weight; a very few 5¼c. Lambs sell mainly at $3,50 @ $4,50 per head. Very fat ones command even $6,00 just now, as they are somewhat scarce.

HOGS.—Arrivals have been very large, numbering some 30,000 for the past four weeks. Prices are correspondingly low, and a general dullness pervades the trade. Good corn-fed hogs brought but 4¼c. @ 4½ per lb. live weight, on the 16th. inst., and have not improved in price since.

THE WEATHER, during the past four weeks, has been warm, with sufficient rain to keep the ground in a good condition for growing crops. Corn is rather backward, owing to a cold, wet May, but it is not too late to count upon a good season yet....Other crops promise well.

Our condensed WEATHER NOTES read: May 25, cloudy A.M., rain P.M.; 26 and 27, drizzling rain. May 28 to June 5, mostly clear, warm, Summer weather, the mercury reaching 83° on the 5th.; June 6, clear A.M., cloudy P.M., with showers at night; 7, clear and warm; 8, very warm and showery; 9 and 10, clear and warm; 11, clear A.M., thunder showers P.M., with heavy rain at night, which continued during the 12th., producing freshets, and causing much damage in some places; 13 to 16, cool, cloudy weather; 17, fog A.M., clear and warm P.M.; 18 to 20, clear, fine, warm weather; 21, clear and very warm A.M., mercury reaching 90°. Heavy thunder shower, accompanied by hail and gust of wind P.M. Trees and buildings were blown down in its track, and life and property destroyed; 22, clear and warm.

☞ **The actual circulation of the Agriculturist to regular subscribers, is believed to be much larger than that of any other Agricultural or Horticultural Journal in the world.**

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Round and Prickly Spinach.
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THE BUCKEYE ROTATING HARROW.

IN offering this implement to farmers we do it with the confident expectation that they will find it an implement after which they have long been seeking, namely, a thorough pulverizer of the soil.

TO FARMERS

We would say, read the following from "THE OHIO FARMER" of May first.

"An entire change in the form of the Harrow has been projected, which in our opinion bids fair to supercede the old-fashioned forms. It consists of a frame made of cross-bars, the ends of which, and points of junction, are armed with teeth in the usual form. The method by which circular motion is produced in this Harrow, is very simple. The center of the wheel or frame rotates freely on a pin or journal, and to this pin is attached a lever, one arm of which stands at right angles with the other. To one of these the horse or ox is fastened by proper appliances, while the end of the other arm carries a weight. This makes the one side of the harrow heavier than the other, and thus sinks the teeth of that side deeper in the soil. When this Harrow is dragged over the ground, the teeth on the light side move rapidly forward, and thus change their relative position, and thus each tooth in turn acts as the fulcrum on which all the rest move. By this means, lines formed by the teeth are in the center nearly rhomboidal, while at the sides they cut each other at very acute angles. The ground by this means is thoroughly pulverized, and no furrows are left on the surface, and if a large stone or root should obstruct the passage of the Harrow, it will pass around. Instead of clogging, by getting large clods fastened between the teeth, this circular motion either grinds those up, or throws them aside at once. We know that this form of Harrow will soon supercede the old one in the estimation of our Farmers, for we have seen it in operation, and it does its work well and thoroughly, saving labor, and making a more evenly field by a more thorough comminution of the surface, and a filling up of furrows"

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☞ Send for a Circular.

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The best Combined Reaping and Mowing Machine in use, as endorsed by the United States Agricultural Society.

Manny's Patent with Wood's Improvement.

It is with much pleasure and renewed confidence, that I offer my machine to the Farmers for the coming harvest, with all its improvements and increased high reputation as a combined Machine and Single mower. The large sale the past season, and great success at the National Trial of Harvest Implements at Syracuse in July last, where it was awarded one Gold and two Silver Medals, is conclusive to every unprejudiced farmer that it is the most approved machine of the kind in use, and the subscriber begs to say that they will be perfect and complete in workmanship and material, and are offered to them on terms accommodating and suited to the times. With each machine will be furnished two scythes, two extra guards two extra sections, one extra pinion, and wrench.

Warranted capable of cutting from 10 to 15 acres of grass or grain per day, in a workmanlike manner.

Price of Machines as heretofore. The Combined Machine varies in price according to width of cut and its adaptation in size and strength to different sections of the country, from $125 to $150, delivered here on the cars.

Price of Single Mower, steel Bar.....$115.00

WALTER A. WOOD,
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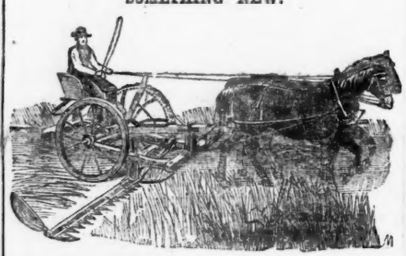

Farmers wishing to purchase Mowing Machines this season, are invited to examine THE MOWING MACHINE which we offer for sale. We are satisfied that they will give it the preference over any other machine now in use, it is a very light draft without the least side draft or weight on the neck of the horses, the cutter bar can be raised in an instant to go over obstructions, stones, stumps, &c. Many other advantages too numerous to mention in a newspaper advertisement. We will forward a circular with full particulars on application.

For sale by JOHN MAYHER & CO.,
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PRICE, $110,00.

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Little American Mower and Reaper

RECEIVED THE

SILVER MEDAL

AT THE SYRACUSE TRIAL.

For lightness of draft, freeness from side draft, adaptation to smooth and uneven surfaces, strength, durability, simplicity of construction, we challenge the world to produce a machine to excel it. It cannot be clogged in any kind of grass, be it wet or dry.

PRICE OF MOWER $106; Mower and Reaper combined, $128. A pamphlet containing every information will be given free on application.

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Send your orders early. New York City.

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FARMERS' MANUFACTURING CO.,
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N. B.—The Brooklyn and Williamsburg City Cars run up to Greenpoint, and the New-York Dry Dock stages go to the Greenpoint Ferry.

STRONG AND DURABLE.—LIGHT OF draft to the team. Will cut all kinds of grass better than it can be done with a scythe—leaving it spread—so as to save labor of spreading it. It can be worked at a slow or fast gait and by oxen if desired. It is easily managed and safe to the driver.

All we claim for it is admitted by those who use it and it has received their universal approbation

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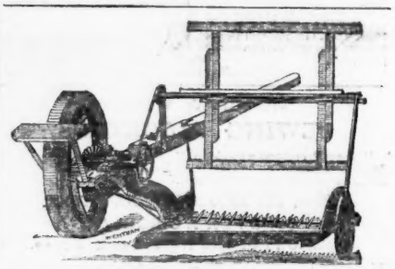
MARSHALL P. WILDER,
President of the U. S. Agricultural Society.

I used one of your Mowers in cutting my entire crop this season; then sold it, and it afterward cut the crops of three other farmers, each of whom bought it. One man paid $140 for it. The whole cost of repairs for the season was not one dollar. Another neighbor cut 240 acres with it at no expense for repairs of any consequence. We all consider it in this neighborhood as the only satisfactory machine ever used here.

JAMES E. DUNLAP.
Jacksonville, Morgan Co., Ill., Dec. 1857.

We cut our entire crop of grass with your Allen Mower this season, and then sold it for $240. It is now in constant use and gives full satisfaction. It is daily running in such grass and clover as used to be considered impossible to be cut by machines.

C. G. & A. STARKWEATHER.
Stockton, California, June 17, 1857.



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Without any Frame, and with a Reel!

THE IMROVEMENTS ON THIS CELEBRATED MACHINE, for 1858, will render it the most desirable machine ever offered to the public. Among these improvements are the following:

1st—An expanding Reel, very simple, and ingeniously arranged so as to be readily attached, and is propelled by the main shaft.

2d—A new, strong and well-braced guard, which will not clog.

3d—An adjustable Roller with a lever, by which the driver, while in his seat, can elevate the finger-bar, and hold it in any desired position, for transportation, to pass over obstructions, and to aid in backing or turning corners.

4th—A Roller in the outer shoe, on which the finger-bar rests, which obviates all side draft and very much lessens the direct draft.

The SIMPLE MOWERS have wrought-iron frames, with all of the other improvements except a Reel. With these improvements the draft of the KETCHUM Machine is as light as any machine known, and by the test with the Dynamometer at Syracuse, by the U. S. Ag. Society last July, the draft of the Reaper was more than one-quarter less than any other of the 13 Reapers on trial. The result is obtained by enlarging the main wheel for Reaping, which lessens the motion of the knives and the actual draft of the machine fully one-quarter.

The VERY BEST MATERIAL is used throughout, and no pains or money are spared to make the KETCHUM MACHINE what the farmer needs.

Sample machines can be seen at all the principal places, and persons are invited to examine them before buying any other—remembering that THE BEST IS ALWAYS THE CHEAPEST.

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PERKINS' Corn Husking Machine, $5 50.

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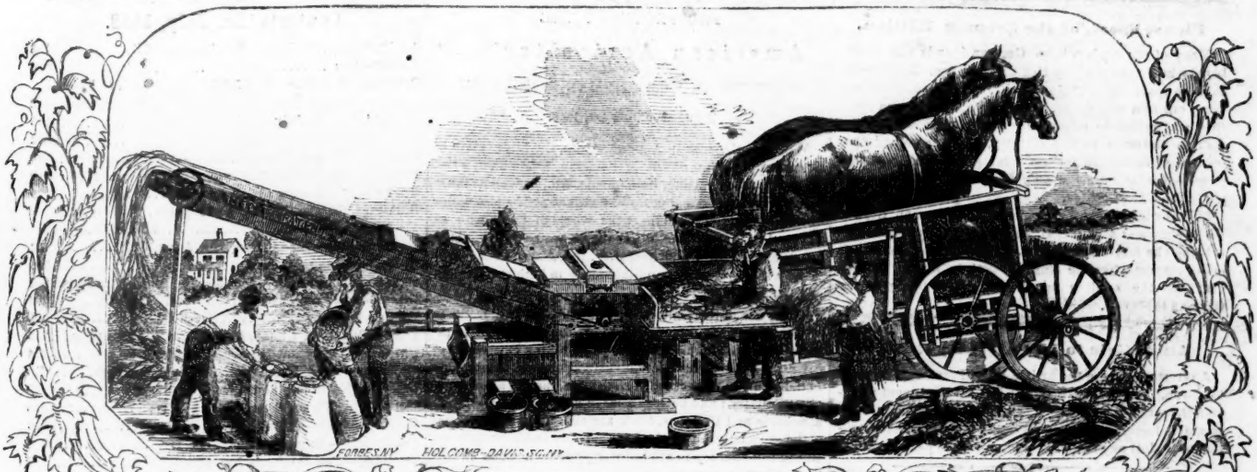
A full assortment of Green Teas Also, choice kinds of Black Teas Oolong, English Breakfast, &c., in half chests, or boxes 10 to 15 lbs. Storekeepers in villages who have a demand for fine teas are invited to look at our stock.

JAMES CASSIDY & CO.
135 Front-St., New-York



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MANUFACTURERS OF
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The largest and best variety of AGRICULTURAL MACHINERY in this Country, and adapted to the wants of all parts of the World.
ALL ARTICLES WARRANTED.

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ILLUMINATED CATALOGUE.
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Have just completed their new Catalogue, the most complete and beautifully illustrated work ever published by any manufacturer. As a work of art it deserves a place in every library. It contains nearly 30 pages new engravings, of which the above is a specimen.
On receipt of six cents in stamps to prepay postage, it will be sent to all applicants.
Local Agencies solicited for the sale of the above machines.

H. A. Lothrop's Patent Hoe.

The subscribers, in presenting this new Hoe to the public, only ask a trial to satisfy the most skeptical of its advantages over the common hoe either in the field or garden, and believing the following testimonial in its favor, among many others received, is more satisfactory to the public than anything we can say in its praise; we will leave it with the public to judge of its merits.

BOSTON, May 13, 1858.

H. A. LOTHROP, ESQ.—MY DEAR SIR:—I am so much pleased with your Patent Hoe that I can not refrain from expressing my great satisfaction in the r use. They are a decided improvement over any similar implement I have ever met with, leaving the ground light and level and accomplishing much more than the common hoe with the same application of power. I think a trial of a few moments will satisfy any one of the correctness of these opinions.

I shall use no other hoe on my grounds, and I would thank you to send me, by express, half a dozen of each size, with bill of the same. Yours respectfully,

MARSHALL P. WILDER.

Manufactured by H. A. LOTHROP & CO., Sharon, Mass.

R. S. STENTON'S LANDSIDE Cutter and Improved Plow.

Patented February 16, 1858. A recent, and one of the greatest improvements in plows ever invented, particularly adapted for breaking up OLD GROUND SOD, and PRAIRIE lands, giving one third more breadth of work for the same team and draught, and in the same time, that is to say, a Plow that, as at present constructed, will turn TWELVE inches, will, with this Landside attachment, cut and turn SIXTEEN inches, with less labor for the man and without any more strain upon the team.

Western men are particularly invited to call and see this great, yet simple improvement which can be adapted to any sod-breaking Plow now in use. Thus an EIGHTEEN inch Western Prairie Breaker can be made to cut and turn a TWENTY-FOUR furrow-slice without any addition to the team. Larger or smaller plows work in the same ratio.

Address or call on R. S. STENTON, 229 Pearl-St., New-York. Licenses or rights for Sale.

RICH'S PATENT IRON BEAM PLOWS.

Having made an arrangement with the Patentee for the Manufacture and sale of the above plows, we are now prepared to furnish them in any quantity. These plows have given the utmost satisfaction where ever they have been tried. The beam being short brings the horses nearer the work and enables the man to guide the plow with more ease. The beam being high and crooked prevents them from being choked out by vines or weeds —for sale by JOHN MAYHER & CO.,
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FOR PRESERVING MEATS, FRUITS, VEGETABLES, the products of the Farm and Dairy, and all perishable articles, WITHOUT DAMAGE from heat and moisture in SUMMER, OR COLD IN WINTER.

Invaluable for Farmers, Grocers, Butchers, Candle and Oil Makers, Hotels, Restaurant Keepers, AND IS THE BEST DAIRY OR MILK HOUSE IN THE WORLD.

Milk can be kept sweet for weeks in Summer and Butter made with equal facility the entire season.

A MILK HOUSE on this plan can be kept at 40° the entire season, causing a perfect yield of cream, and the purest butter known.

For rights, plans, or estimates, apply to the undersigned.

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J. L. ALBERGER,
Buffalo, N. Y

Delano's Independent Tooth Hay and Grain Rake.

This Rake has given universal satisfaction wherever it has been introduced. The ease and facility with which the hay may be placed in windrows, or bunched or cocked preparatory to loading, with entire freedom from dust: its superiority as a gleaner; the adaptation of the teeth to all surfaces, however irregular, are qualities which commend the DELANO RAKE, and must ultimately bring it into exclusive use; in short, it is as greatly superior to the revolver or any other, as the revolver was, when first introduced, to the hand rake. We know of farmers who harvest their entire crop of hay by the use of the DELANO RAKE and the fork alone—no hand rake being needed in the field.

Price with wheels complete $25.

SELF ADJUSTING HAY ELEVATOR OR HOISTING FORK.

By the use of this simple and low priced apparatus, a two-horse wagon-load may be unloaded and deposited in the mow, just where it is needed, within ten minutes; and if unusual exertion be made, to avoid a threatened storm, in half that time, the workmen being fresh and ready for re-loading.

Those manufactured by us are of improved construction. We also manufacture the Anti-Friction Blocks, to accompany the Forks. As these blocks cannot take fire, they are therefore cheaper than the common low-priced blocks.

Price of Hay Elevator $3. Anti-Friction Blocks, per set $5. Manufactured and for sale by

D. LANDRETH & SON.
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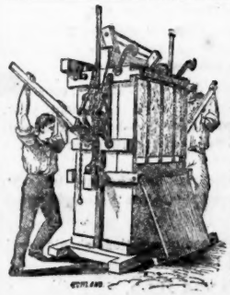

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Wm. H. Neilson, President of the Board of Education; John Elliott, of Riggs & Co.; and T. J. Coleman, Bankers, Wall-st, P. L. Ross, of Ross, Falconer & Co.; H. M. Whitlock, of H. M. & E. A. Whitlock & Co.; John Powers, Machinist; F. C. Cooper, of A. H. Gale & Co.; F. S. Halstead, of Halstead, Stiles & Co.; Henry M. Platt, of Platt & Brother; A. R. O'Lark, of Sun Mutual Ins. Company; J. Q. Brown, Agt. of Board of Underwriters, and 100 others."

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Please Speak of the German Edition.

Many of our readers have German friends and neighbors, who do not read the English language. By speaking to them respecting our German Edition, they will not only favor our new enterprize, but confer a benefit upon those they may induce to subscribe. While there are several million Germans in this country, there is not another journal of this character and size, printed in their language—this is now the *only* German Agricultural paper in the United States.

☞ Any one desiring copies of the German Edition (to be shown as specimens), will be cheerfully supplied on making the fact known to us. The German Edition is in all respects, like the English, both in matter and engravings—the reading matter of course being in the German language.

An Article to be Carefully Read.

After stereotyping the article on "Preparing Food for Children," page 214 of this number, an intelligent physician happening to read a proof of it, thought it of so much importance, that we ought to call special attention to it, lest any reader should chance to pass it over.

A Good Time to begin New Subscriptions.

This number is the commencement of the second half of volume XVII, and now is a convenient time for new subscribers to begin. The *second* half volume will be furnished *this* year, at the annual rates—fifty cents for single subscribers or 40 cents in clubs of ten or more. As the paper is stereotyped, we can at any time furnish any previous number desired—as far back as the begining of last year.

The Long White French Turnip Seed

Is being rapidly called for, and will run out, we fear, before all who call for it can be supplied. Many subscribers, who have had other seeds previously, send to us for this in addition. We beg to repeat again, that our supply is so small, comparatively, that we can only give it out, this year, as premiums for new subscribers.

Any person sending in new subscribers for either the English or German edition, may order an ounce for each dollar forwarded. A 3-cent postage stamp should hereafter be sent to prepay the postage on each half ounce ordered. The seed may be sown any time in July, or the first week in August.

An ounce package will suffice for twenty square rods, if carefully sown, and this will furnish a fine supply of turnips for table use next Winter and Spring, and some for feeding. We are now using some of last year's crop, and find them white, firm, sweet, free from rankness of taste, or woody texture. As previously stated, we believe this the best turnip ever raised in this country, and we expect to be able to obtain a large supply of the seed to add to our list of seeds for general distribution to all subscribers next Winter.

EXTRA PREMIUMS,

offered *only* in return for time and services to persons procuring and forwarding *new* subscribers to the *American Agriculturist*. The subscribers obtained will themselves be entitled to receive the seeds offered in our regular list, No. 1 to No. 52. ☞ Only *one* of the following premiums will be given on the same new subscriber.

Premium No. 4.

To any person obtaining a *new* subscriber for 1858 (vol. 17), after May 1st, we will, in return for the favor, send *an ounce* package of the seed of the *Long White French Turnip*, described on page 134 of May number. An ounce will be given for *each* new name. The new subscriber will himself be entitled to select the usual packages of the seeds, Nos. 1 to 52, offered in our February number. The names may be sent at $1 each (or at club rates when for new clubs or additions to those already formed); but when the seed is to go to Canada or to the Pacific Coast, 14 cents additional will need to be sent to us for extra postage on each ounce of seed forwarded.

Premium No. 1.

Webster's Unabridged Dictionary, is still offered for 40 subscribers, obtained at club rates.

When Mailed.—This July number (English edition) will be mailed from the 24th to the 28th of June, those going farthest being sent off first. The mailing of the German edition will follow immediately, that is, on June 28 and 29.....Our present large edition—though worked on a *double* Steam Press, which prints *both* sides of the sheet at once—requires about a week for printing the outside sheets alone. The engravings, to be well printed, will not admit of a higher rate of speed.

PROSPECTUS OF THE

American Agriculturist.

PRINTED IN THE GERMAN LANGUAGE.

Beginning July 1st, 1858.

We take pleasure in Announcing to the large class of German people interested in Farming, Gardening, Fruit Growing, Stock raising, Implements, &c., as well as those who have, perchance, but a small village or city plot under culture, that in order to meet the wants of those who as yet read only the German Language, we have completed arrangements, by which hereafter, the *American Agriculturist* will be printed simualtaneously in both the English and GERMAN LANGUAGES.

There are in the United States alone, several millions of German people, among whom are found a large number of our most industrious and pains-taking cultivators of the Soil. In Germany more investigations are being made in Scientific and practical Agriculture, than in almost any other Country; and besides a large number of Agricultural Schools and Colleges, there are several periodicals devoted especially to practical Agriculture and Horticulture. But in this country next to nothing has been done in this department.

We, therefore, in response to oft repeated calls from the German people, very cheerfully enter the open field, and will endeavor to supply what seems to be a great desideratum, viz.: a Journal in the *German* Language, devoted exclusively to subjects connected with SOIL CULTURE, or to the out-door and In-door labors of Rural Life.

Since practical operations are founded upon the same principles, and the modes of tillage are the same, whether pursued by those speaking English or German, we believe that a Journal carried on in both Languages may be better in each, than if published in either Language only, since a wider class of practical experience will thus be drawn from.

Again, the use of the same engravings and editorials, as well as publishing force, in both editions, will economize expense, so that a much cheaper Journal, or a better one can be supplied for the same cost, than if two separate enterprizes were carried on.

The *American Agriculturist* was originated in 1842, and it has now attained a circulation *greater than any other like journal in the world*, while it is on all hands acknowledged to be a standard work, unequalled for the large amount of practical information it supplies at a very small cost. Time, patience and long experience have been required to bring it to its present standard. The subscribers to the German edition will at once reap the benefit of all these advantages.

The teachings of the AGRICULTURIST *are confined to no State or Territory, but are adapted to the wants of all sections of the country—it is, as its name indicates, truly* AMERICAN IN ITS CHARACTER.

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Subscriptions can begin Jan. 1st., July 1st., or at any other dates if specially desired. (For the present, year, subscriptions to the German edition, when desired, will be taken from July to December inclusive, at half the above yearly rates.)

The paper is considered *paid* for whenever it is sent, and will be promptly discontinued when the time for which it is ordered expires.

All business and other communications should be addressed to the Editor and Proprietor,

ORANGE JUDD,
No. 189 Water st, New-York.

☞ Be careful to give plain directions for the name of each subscriber, and of his Post Office, County and State.

☞ *Both* Editions are **Stereotyped**—so that back numbers of the English Edition from June 1, 1857, and of the German from July 1858, *can always be supplied.*

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Agricultural Exhibition Lists Desired.

On page 219, we have given a list of State and County Exhibitions, for many of which we are indebted to our correspondents. We solicit further reports from the entire country, that we may give next month as complete a table as possible.

We have just received the following County Reports: *Indiana*—Fayette Co., at Connersville, Sept. 7—10; Rush Co., at Rushville, Sept. 14—17. *Iowa*—Johnson Co., at Iowa City. *Nebraska*—Nemaha Co., at Brownville, Oct. 13—16. *New-Hampshire*—Sullivan Co., at Charlestown, Sept. 15—16. *New-Jersey*—Burlington Co., at Mt. Holly, Oct. 5—6. *Wisconsin*—St. Croix and Pierce Counties, a River Falls, Sept. 22—23.